

Draft

INTEGRATED NATURAL RESOURCES
MANAGEMENT PLAN (INRMP) AND
ENVIRONMENTAL ASSESSMENT
OF THE
IMPLEMENTATION OF THE INRMP
NIAGARA FALL AIR RESERVE STATION,
NEW YORK



MAY 2012

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AND
ENVIRONMENTAL ASSESSMENT
OF THE IMPLEMENTATION OF THE INRMP
NIAGARA FALLS AIR RESERVE STATION,
NEW YORK**

Prepared for

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MAY 2012

U.S. AIR FORCE RESERVE COMMAND
Niagara Falls Air Reserve Station, New York

This Integrated Natural Resources Management Plan (INRMP), dated *Final INRMP Signature Date*, has been prepared in accordance with regulations, standards, and procedures of the Department of Defense, the U.S. Air Force, and the Sikes Act Improvement Amendment of 1997 (16 United States Code [U.S.C.] §670a) in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the New York State Department of Environmental Conservation (NYSDEC).

To the extent that resources permit, the USFWS and the NYSDEC, by signature of their agency representative, do hereby agree to enter a cooperative agreement program for the conservation, protection, and management of fish and wildlife resources present on the Niagara Falls Air Reserve Station. The intention of this agreement is to develop functioning, sustainable ecological communities on these sites that integrate the interests and missions of the agencies charged with conservation, protection, and management of natural resources in the public interest. This agreement may be modified and amended by mutual agreement of the authorized representatives of the three agencies. This agreement will become effective upon the date of the last signatory and shall continue in full force for a period of 5 years or until terminated by written notice to the other parties, in whole or in part, by any of the parties signing this agreement.

By their signatures below, or an enclosed letter of concurrence, all parties grant their concurrence and acceptance of the following document.

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HQ AFRC Natural Resources Manager

Date

Allan L. Swartzmiller

Commander

Date

Patrick O. Ginavan

Commander

Date

James Mathews

Niagara Falls ARS Natural Resources Manager

Date

Executive Summary

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This Integrated Natural Resources Management Plan (INRMP) has been developed for the U.S. Air Force Reserve Command (AFRC) in accordance with the provisions of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.) and Air Force Instruction (AFI) 32-7064, *Integrated Natural Resources Management*. This Plan provides Niagara Falls Air Reserve Station (ARS) with a detailed description of the Installation and its surrounding environment, as well as the various management practices designed to mitigate negative impacts and to enhance the positive effects on regional ecosystems without adversely affecting the military mission. In order to obtain an accurate assessment of Installation influences, analyses were conducted to determine the physical and biotic nature of the Installation and its surrounding environment, and the operational activities taking place.

According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively.” The adoption of an INRMP can be considered a major Federal action as defined by Section 1508.18 of the CEQ regulations. The CEQ Regulations (40 CFR Parts 1500 to 1508) for implementing the procedural provisions of the NEPA (42 U.S.C. 4321 et seq.) requires the preparation of an EA or EIS for the implementation of an INRMP, whichever is appropriate. For the purposes of implementing the NFARS INRMP, an EA has been chosen as the appropriate level of NEPA analysis, and is integrated as part of this INRMP.

This INRMP will be a guide for management and stewardship of all natural resources present on the Installation while ensuring the successful accomplishment of the Installation’s mission. A multiple-use approach was used to allow for the presence of mission-oriented activities while efficiently managing the natural resources to conserve biodiversity and environmental quality.

The maintenance and enhancement of biological diversity is particularly important in the management of natural resources and will be accomplished through the implementation of specific management practices identified in this INRMP.

The Plan presents practicable alternatives and recommendations that can ensure minimal impact on the Installation’s missions while providing for the management and stewardship of natural resources as well as the conservation and enhancement of existing ecosystems on the Installation. Consequently, in some cases, the implementation of some of these recommendations sacrifices the improvement of the Installation’s natural resources in deference to the safety and efficiency of the flying mission. The overriding goals for this INRMP are as follows:

- No net loss in the capability of Niagara Falls ARS lands to support the military mission while enhancing natural resource areas
- Minimize habitat fragmentation and promote the natural pattern and connectivity of habitats
- Protect native species and discourage nonnative, exotic species
- Protect rare and ecologically important species and unique or sensitive environments
- Maintain or mimic natural processes
- Protect genetic diversity

1 • Rehabilitate and enhance damaged ecosystems, communities, and species without negatively
2 affecting the military mission

3 • Monitor biodiversity impacts.

4 From these goals and objectives, management actions were identified that structure this Plan’s guidance.
5 However, each of the management strategies described in this Plan should be monitored so that changes
6 in strategies can be made as environmental conditions change.

7 Specific management “topics of concern” in a number of natural resources subject areas were identified
8 and are presented in the INRMP. Some of these natural resources topics of concern could have an
9 adverse impact on the Installation’s flying mission or future planning operations. The potential negative
10 impacts could range from delaying the construction of new buildings to loss of life resulting from
11 severely damaged aircraft. It is important that the issues identified below have a schedule prepared for
12 their resolution. The topics of concern involving natural resources constraints to Installation planning and
13 mission are presented in the following paragraphs. The areas associated with these topics of concern are
14 further depicted in **Figure ES-1**, Composite Natural Resources Constraints at Niagara Falls ARS.

15 **Ecosystem Management**

16 • Niagara Falls ARS personnel should continue utilizing an ecosystem management approach to
17 natural resources management.

18 • In order to establish ecosystem management goals, it is necessary to prioritize stressors on the
19 ecological system and specific management actions.

20 **Fish and Wildlife Management**

21 • Bird aircraft strikes have occurred and have been reported at the Installation.

22 • Effectiveness of bird scare tactics needs to be analyzed.

23 • Niagara Falls ARS does not have a current plan to manage the fish and wildlife resources and
24 their habitats on the Installation. There needs to be a cooperative agreement with U.S. Fish and
25 Wildlife Service (USFWS), New York State Department of Environmental Conservation
26 (NYSDEC), and U.S. Department of Agriculture (USDA)-Wildlife Services (WS) for protecting,
27 conserving, and managing fish and wildlife resources.

28 • Current fenceline maintenance should continue to prevent or reduce the free-entry of wildlife and
29 domestic animals onto the Installation.

30 **Threatened or Endangered Species**

31 • Early spring and year-round bird surveys are necessary to elucidate state-listed bird species
32 occurrence and behavior at Niagara Falls ARS.

33 • USFWS developed a list to include New York State species that might be found on the Niagara
34 Falls ARS or the surrounding region. Surveys for these species have not been conducted.

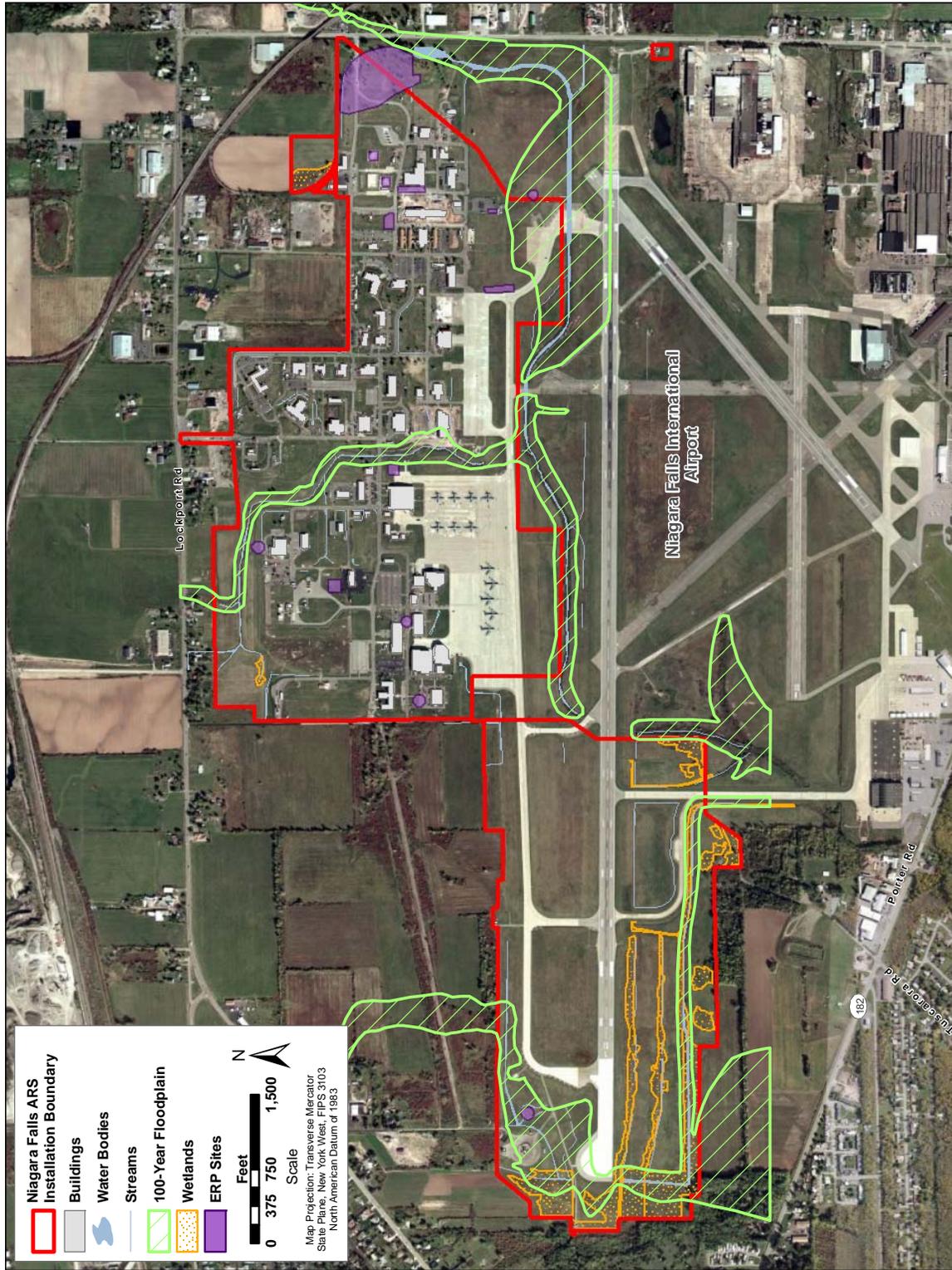


Figure ES-1. Composite Natural Resources Constraints at Niagara Falls ARS

1 **Habitat Management**

- 2 • Although the vegetative communities previously identified have not changed significantly over
3 the years, the plants identified within the communities might have changed.
- 4 • The current wildlife habitat on Niagara Falls ARS is predominantly grass and wetland, both of
5 which have the potential to attract wildlife.
- 6 • Areas currently managed as improved and semi-improved grounds increase maintenance costs
7 and reduce habitat quality.
- 8 • Nonnative and invasive species could be endangering populations of native species and creating
9 lower quality habitat available for wildlife.

10 **Wetlands and Floodplains**

- 11 • A wetland boundary reassessment every 5 years is recommended by the U.S. Army Corps of
12 Engineers (USACE); therefore, the next reevaluation should take place in 2013.
- 13 • Encroachment into wetland areas could be necessary in the future as a result of construction or
14 military training activities.
- 15 • Niagara Falls ARS does not have a current management plan for the conservation of the
16 Installation's wetlands resources.
- 17 • The diversity of habitat in Cayuga Creek attracts nuisance (i.e., high Bird Aircraft Strike Hazard
18 (BASH) potential) avian species.

19 **Watershed Management**

- 20 • Past analyses were unable to identify the source of contaminants in Cayuga Creek.
- 21 • Increased volume and velocity of storm water runoff during storm events can contribute to
22 erosion and sedimentation in surface water features adjacent to roads.

23 **Grounds Maintenance**

- 24 • The majority of the acreage at Niagara Falls ARS is improved or semi-improved space and thus
25 receives intensive maintenance.
- 26 • Continue to implement the Integrated Pest Management Plan. This Plan is to be used as a tool to
27 reduce reliance on pesticides, enhance environmental protection without negatively affecting the
28 military mission, and maximize use of Integrated Pest Management (IPM) techniques.
- 29 • There are trees and tree branches that are in close proximity to, or are touching buildings and
30 power lines on the Installation.
- 31 • During the 2008 reevaluation of wetland boundaries, purple loosestrife was ubiquitous in some
32 areas.

1 **Outdoor Recreation**

- 2 • Sensitive species habitat could be adversely impacted due to parking at the airshow.
- 3 • Currently, there is limited public use of resources and capabilities.
- 4 • There is potential to create an interpretive nature trail that provides a defined recreational space
5 with signage and appropriate maps.
- 6 • The consequences of public access regarding general safety and the operational security of the
7 mission should be evaluated.

8 **Surrounding Lands**

- 9 • Conflicting land uses outside the Installation can attract high BASH threat avian species.
- 10 • Maintenance of the airport property owned and operated by the Niagara Frontier Transportation
11 Authority (NFTA) south of the main runway is critical to safety of the flying mission and to the
12 successful implementation of this INRMP.

13 **Geographic Information Systems (GIS)**

- 14 • Historic and current sightings and locations of threatened and endangered species at NFARS are
15 not available in GIS format.

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INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AND
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FOR
NIAGARA FALLS ARS, NEW YORK

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1. Introduction

1.1 Purpose and Goals of the Plan

This Integrated Natural Resources Management Plan (INRMP) has been developed for use by Niagara Falls Air Reserve Station (ARS) in accordance with Air Force Instruction (AFI) 32-7064 - *Integrated Natural Resources Management* and Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, and the provisions of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.)

The INRMP provides a detailed description (e.g., location, history, and mission) of the Installation, and impacts on and information concerning the surrounding physical and biotic environment. Furthermore, the INRMP presents various management practices, in compliance with Federal, state, and local standards, designed to mitigate negative impacts and to enhance the positive effects on regional ecosystems without adversely affecting the military mission.

The INRMP integrates all aspects of natural resources management with the rest of the Installation's mission, and, therefore, becomes the primary tool for effectively managing the associated ecosystems while ensuring the successful accomplishment of the military mission. The INRMP will be a guide for management and stewardship of all natural resources present on the Installation. A multiple-use approach allows for the presence of mission-oriented activities along with the conservation of environmental quality through the efficient management of natural resources.

Specific management practices identified in this INRMP have been developed to enhance and maintain biological diversity without negatively affecting the military mission, while providing connectivity to the ecosystems of which the Installation is a part. Specifically, management practices should (1) minimize habitat fragmentation and promote the natural pattern and connectivity of habitats; (2) protect native species and discourage nonnative, exotic species; (3) protect rare and ecologically important species; (4) protect unique or sensitive environments; (5) maintain or mimic natural processes; (6) protect genetic diversity; (7) restore ecosystems, communities, and species; and (8) monitor biodiversity impacts. However, each of the management practices described in this INRMP should be monitored so that modifications can be made during implementation as conditions change.

Biodiversity is defined as "the variety of life and its processes" and can be defined on four basic levels: genetic diversity, species richness, ecosystem diversity, and landscape diversity. Genetic diversity refers to the variation of genotypes within a species that influences different characteristics among individuals or populations. Species richness refers to the number of different kinds of species within a given area. Ecosystem diversity refers to the variety of ecosystems that interact across a large land area. Human communities are entirely and completely dependent on the goods and services provided by our diverse ecosystems. Degradation of these ecosystems and the biodiversity within them is one of the foremost limitations to human prosperity. Ecosystem sustainability is the key to both biological diversity and human existence. It is the goal of this INRMP to successfully integrate ecological sustainability with goals and objectives that will sustain human communities and the operational mission of Niagara Falls ARS. By protecting habitats that support the greatest variety of life, this INRMP helps perpetuate viable, sustainable populations of native species and communities.

The comprehensive planning process, which incorporates logistics and operations of Niagara Falls ARS, should incorporate the concerns presented in this INRMP, so that the ecologic growth of the Installation can progress in a manner consistent with, and complementary to, the objectives of the U.S. Air Force (USAF) with respect to the protection of natural resources.

1 **1.2 Management Philosophy**

2 As part of its mission, the USAF has chosen to be a national leader in environmental and natural
3 resources stewardship both now and in the future. The vitality of natural resources must be ensured in
4 order to achieve its military mission. As a steward of natural resources, Niagara Falls ARS acknowledges
5 its commitment to be a conservation leader for its cognizant areas.

6 Conservation is an integration or blending of natural resources management and preservation designed to
7 maintain ecosystem integrity. This INRMP is structured to successfully accomplish conservation. It is a
8 dynamic document that will be maintained and adapted, as necessary, to reflect updated natural resources
9 information. The development and implementation of this INRMP indicates that senior management at
10 Niagara Falls ARS is committed to natural resources management as reflected in Department of Defense
11 Instruction (DoDI) 4715.3 *Environmental Conservation Program*.

12 The INRMP was developed using an interdisciplinary approach, gathering information from a variety of
13 Installation organizations. Guidance was also solicited from several Federal, state, and local regulatory
14 agencies, including the U.S. Fish and Wildlife Service (USFWS), U.S. Department of Agriculture
15 (USDA) - Wildlife Services (WS), Natural Resources Conservation Service (NRCS), U.S. Army Corps of
16 Engineers (USACE), the New York State Department of Environmental Conservation (NYSDEC), the
17 Niagara Frontier Transportation Authority (NFTA), the New York Natural Heritage Program, and the
18 Audubon Society to ensure the accuracy of the data concerning natural resources on or within the vicinity
19 of the Installation, and the presentation of information in agreement with local and regional management
20 strategies. Correspondence with these agencies has been documented and will satisfy the requirements of
21 AFI 32-7061, *The Environmental Impact Analysis Process* and the provisions of the Sikes Act (16 U.S.C.
22 670a et seq.). These varying perspectives allow for a more accurate portrayal of the status and
23 management needs of local ecosystems, while allowing Niagara Falls ARS to accomplish its mission(s) at
24 the highest possible level of efficiency. As a result, the probable effects of Installation operations on the
25 surrounding natural resources allow for the development of possible operational alternatives, which could
26 result in lessening impacts on the environment.

27 Consultation and congruence with representatives from USFWS and NYSDEC satisfies the provisions of
28 the Sikes Act (16 U.S.C. 670a et seq.). The Sikes Act requires the preparation of an INRMP in
29 cooperation with the USFWS and the appropriate state fish and wildlife agency (i.e., NYSDEC). In
30 addition, it is required that the resulting Plan reflects the mutual agreement of the parties concerning
31 conservation, protection, and management of fish and wildlife resources. The Sikes Act also requires
32 public comment on the INRMP at its inception, as well as after each required 5-year revision.

33 The INRMP presents practicable alternatives and recommendations that can ensure minimal impact on
34 the Installation's missions, as well as the management and stewardship of natural resources and the
35 enhancement of existing ecosystems on the Installation. Consequently, the implementation of some of
36 these recommendations could sacrifice the improvement of the Installation's natural resources in
37 deference to the safety and efficiency of the flying mission.

38 **1.3 Authority**

39 This INRMP is developed under, and proposes actions in accordance with, applicable Department of
40 Defense (DoD) and USAF policies, directives, and instructions. Issues addressed in this Plan use
41 guidance provided under DoD Directive (DoDD) 4700.4, *Natural Resources Management Program*;
42 AFPD 32-70; AFI 32-7065, *Cultural Resources Management*; and AFI 32-7064. DoDD 4700.4 provides
43 direction for DoD Installations in establishing procedures for multiple use management of natural

1 resources. AFPD 32-70 discusses general environmental quality issues, including proper cleanup of
 2 polluted sites, compliance with applicable regulations, conservation of natural resources, and pollution
 3 prevention. AFI 32-7065 provides guidance on the preservation of cultural resources at USAF
 4 Installations. Finally, AFI 32-7064 provides the necessary direction and instructions for preparing an
 5 INRMP. **Table 1-1** summarizes key legislation and guidance used to create and implement this INRMP.

6 **Table 1-1. Annotated Summary of Key Legislation Related**
 7 **to Design and Implementation of the INRMP**

Federal Public Laws and Executive Orders	
<i>National Defense Authorization Act of 1989, Public Law (P.L.) 101-189; Volunteer Partnership Cost-Share Program</i>	Amends two acts and establishes volunteer and partnership programs for natural and cultural resources management on DoD lands.
<i>Defense Appropriations Act of 1991, P.L. 101-511; Legacy Resource Management Program</i>	Establishes a program for the stewardship of biological, geophysical, cultural, and historic resources on DoD lands.
<i>Executive Order (EO) 11988, Floodplain Management</i>	Provides direction regarding actions of Federal agencies in floodplains, and requires permits from state and Federal review agencies for any construction within a 100-year floodplain.
<i>EO 11990, Protection of Wetlands</i>	Requires Federal agencies to avoid undertaking or providing assistance for new construction in wetlands unless there is no practicable alternative, and all practicable measures to minimize harm to wetlands have been implemented.
<i>EO 11514, Protection and Enhancement of Environmental Quality</i>	Federal agencies shall initiate measures needed to direct their policies, plans, and programs to meet national environmental goals. They shall monitor, evaluate, and control agency activities to protect and enhance the quality of the environment. In addition, there is to be no net loss of wetlands affected by any government project.
<i>EO 11593, Protection and Enhancement of the Cultural Environment</i>	All Federal agencies are required to locate, identify, and record all cultural and natural resources. Cultural resources include sites of archaeological, historical, or architectural significance. Natural resources include the presence of endangered species, critical habitat, and areas of special biological significance.
<i>EO 11987, Exotic Organisms</i>	Agencies shall restrict the introduction of exotic species into the natural ecosystems on lands and waters, which they administer.

Federal Public Laws and Executive Orders (continued)	
<i>EO 12088, Federal Compliance With Pollution Control Standards</i>	Delegates responsibility to the head of each executive agency for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution. This order gives the U.S. Environmental Protection Agency (USEPA) authority to conduct reviews and inspections to monitor Federal facility compliance with pollution control standards.
<i>EO 12898, Environmental Justice</i>	Requires certain Federal agencies, including the DOD, to the greatest extent practicable and permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse health or environmental effects on minority and low-income populations.
<i>EO 13112, Exotic and Invasive Species</i>	Requires Federal agencies to prevent the introduction of invasive species and provides for their control and minimizes the economic, ecological, and human health impacts that invasive species cause.
<i>EO 13045, Protection of Children from Environmental Health and Safety Risks</i>	Makes it a high priority to identify and assess environmental health and safety risks that could disproportionately affect children. It also directs agencies to ensure that policies, programs, activities, and standards address such risks if identified.
<i>EO 13186, Protection of Migratory Birds</i>	Directs Federal agencies taking actions that have, or are likely to have, a measurable negative effect on migratory birds to develop and implement a Memorandum of Understanding with the USFWS to promote the conservation of migratory bird populations.
United States Codes	
<i>National Environmental Policy Act of 1969 (NEPA), as amended; P.L. 91-190, 42 U.S.C. 4321 et seq.</i>	Requires Federal agencies to utilize a systematic approach when assessing environmental impacts of government activities. NEPA proposes an interdisciplinary approach in a decision-making process designed to identify unacceptable or unnecessary impacts on the environment.
<i>Leases: Non-excess Property of Military Departments, 10 U.S.C. 2667, as amended</i>	Authorizes DoD to lease to commercial enterprises Federal land that is not currently needed for public use. Covers agricultural outleasing program.
<i>Conservation Programs on Military Installations (Sikes Act), as amended; P.L. 86-797, U.S.C. 670(a) et seq.</i>	Requires Federal military Installations with adequate wildlife habitat to implement cooperative agreements with other agencies and develop long-range INRMPs. Thereby, it is appropriate to manage natural resources for multipurpose uses and provide the public access to those uses to the extent consistent with the military mission. The act also sets guidelines for the collection of fees for the use of natural resources such as hunting and fishing.

United States Codes (continued)	
<i>Federal Land Use Policy and Management Act, 43 U.S.C. 1701-1782</i>	Requires management of public lands to protect the quality of scientific, scenic, historical, ecological, environmental, and archaeological resources and values; as well as to preserve and protect certain lands in their natural condition for fish and wildlife habitat. This act also requires consideration of commodity production such as timbering.
<i>Clean Air Act, 42 U.S.C. 7401-7671q, July 14, 1955, as amended</i>	This act, as amended, is known as the Clean Air Act of 1970. The amendments made in 1970 established the core of the clean air program. The primary objective is to establish Federal standards for air pollutants. It is designed to improve air quality in areas of the country which do not meet Federal standards and to prevent significant deterioration in areas where air quality exceeds those standards.
<i>Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. 1251-1387</i>	The Clean Water Act (CWA) is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Primary authority for the implementation and enforcement rests with USEPA.
<i>Migratory Bird Treaty Act 16 U.S.C. 703-712</i>	The Migratory Bird Treaty Act implements various treaties and is for the protection of migratory birds. Under the act, taking, killing, or possessing migratory birds is unlawful without a permit.
<i>Endangered Species Act of 1973, as amended; P.L. 93-205, 16 U.S.C. 1531 et seq.</i>	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no Federal action is allowed to jeopardize the continued existence of an endangered or threatened species. The Endangered Species Act also requires consultation with the USFWS and the National Marine Fisheries Service and the preparation of a biological assessment when such species are present in an area that is affected by government activities.
<i>National Historic Preservation Act, 16 U.S.C. 470 et seq.</i>	Requires Federal agencies to take account of the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). Provides for the nomination, identification (through listing on the National Register), and protection of historical and cultural properties of significance.
<i>Federal Noxious Weed Act of 1974, 7 U.S.C. 2801-2814</i>	The act provides for the control and management of nonindigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or public health.
<i>Lacey Act of 1900, (16 U.S.C. 701, 702; 31 Stat. 187, 32 Stat. 285)</i>	The Lacey Act provides that it is unlawful to import, export, sell, acquire, or purchase fish, wildlife, or plants taken, possessed, transported, or sold (1) in violation of U.S. or Indian tribal law; or (2) in interstate or foreign commerce involving any fish, wildlife, or plants taken, possessed, or sold in violation of state or foreign law.

<i>Sale of certain interests in land; logs 10 U.S.C. 2665</i>	Authorizes sale of forest products and reimbursement of the costs of management of forest resources.
DoD Policy, Directives, and Instructions	
<i>DoDD 4715.1, Environmental Security</i>	Establishes policy for protecting, preserving, and (when required) restoring and enhancing the quality of the environment. This directive also ensures that environmental factors are integrated into DoD decision-making processes that might impact the environment, and are given appropriate consideration along with other relevant factors.
<i>DoDI 4715.3, Environmental Conservation Program</i>	Implements policy, assigns responsibility, and prescribes procedures under DoDD 4715.1 for the integrated management of natural and cultural resources on property under DoD control. <i>Note: DoD Directive 4700.4 has been rescinded.</i>
USAF Instructions and Directives	
<i>AFI 32-7064, Integrated Natural Resources Management</i>	Implements AFD 32-70, <i>Environmental Quality</i> ; DoDI 4715.3, <i>Environmental Conservation Program</i> ; and DoDI 7310.5, <i>Accounting for Sale of Forest Products</i> . It explains how to manage natural resources on Air Force property in compliance with Federal, state, and local standards.
<i>Policy Memo for Implementation of Sikes Act Improvement Amendments, USAF Environmental Office (HQ USAF/ILEV) on January 29, 1999</i>	Outlines the Air Force’s interpretation and explanation of the Sikes Act Improvement Act of 1997.
<i>AFPD 32-70, Environmental Quality</i>	Outlines Air Force mission to achieve and maintain environmental quality on all Air Force lands by cleaning up environmental damage resulting from past activities, meeting all environmental standards applicable to present operations, planning its future activities to minimize environmental impacts, managing responsibility the irreplaceable natural and cultural resources that it holds in public trust, and eliminating pollution from its activities wherever possible. AFPD 32-70 also establishes policies to carry out these objectives.
<i>Environmental Impact Analysis Process (32 Code of Federal Regulations [CFR] Part 989) and AFI 32-7061, Environmental Impact Analysis Process</i>	Provides guidance and responsibilities in the EIAP for implementing INRMPs. Implementation of an INRMP constitutes a major Federal action and therefore is subject to evaluation through an Environmental Assessment or an Environmental Impact Statement.
<i>AFI 32-7062, Air Force Comprehensive Planning.</i>	Provides guidance and responsibilities related to the Air Force comprehensive planning process on all Air Force-controlled lands.

AFI 32-7065, Cultural Resources Management	This instruction implements AFD 32-70 and DODD 4715.3, <i>Environmental Conservation Program</i> . It explains how to manage cultural resources on USAF property in compliance with Federal, state, territorial, and local standards.
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1 1.4 Use and Organization of the Plan

2 This INRMP is a “living” document that integrates all aspects of natural resources management at
3 Niagara Falls ARS. Proper utilization of this Plan (e.g., the protection of natural resources), should not
4 impair the ability of the Installation to perform its mission(s). This Plan has been written in accordance
5 with all applicable USAF and DoD policies, directives, and instructions, and has been reviewed and
6 approved by the Niagara Falls ARS Environmental, Safety, and Occupational Health Committee
7 (ESOHC) and Headquarters (HQ) Air Force Reserve Command (AFRC).

8 The USAF considers its goals and objectives with respect to the protection and enhancement of natural
9 resources when planning projects and mission changes. Potential impacts should be assessed, and
10 possible alternatives that reduce negative impacts should be explored. Applicable sections of this Plan
11 should be referenced when establishing new natural resources management strategies in response to
12 changing missions or new projects.

13 This INRMP consists of six sections that describe fundamental characteristics of the Installation. The
14 location of Niagara Falls ARS is described in **Section 2**. To comply with NEPA, the environment
15 affected by the implementation of this INRMP, including the physical environment, the biotic
16 environment, and the mission impacts on the environment, is described in **Section 3**. Additional resource
17 areas not directly impacted by implementation of the INRMP, but possibly important in formulating
18 natural resources objectives (e.g., air quality, noise, cultural resources, socioeconomics, and hazardous
19 materials and waste) are also included in **Section 3**. This affected environment section fulfills part of the
20 NEPA analysis requirements of an EA. Resources management concerns and principles and the
21 associated goals and objectives to resolve these concerns are presented in **Section 4**. **Section 5**
22 summarizes the natural resources management concerns and proposes a schedule for their resolution
23 through specific goals and objectives used to facilitate management of the topic of concern. **Section 6**
24 assesses the known, potential, and reasonably foreseeable environmental consequences related to
25 implementing this INRMP and managing natural resources. The list of people and agencies that were
26 involved in the preparation of this INRMP is found in **Section 7**. The references used during the
27 preparation of this INRMP are presented in **Section 8**.

28 Acronyms, terms, and definitions of land management categories used in this INRMP are defined in
29 **Appendix A**. The persons and agencies contacted during the preparation of this INRMP are listed in
30 **Appendix B**. Environmental documentation prepared in support of this INRMP, such as correspondence
31 with Federal and state natural resources agencies, is also presented in **Appendix B**. The Natural
32 Resources Database, prepared to track progress toward the goals established in this INRMP, is presented
33 in **Appendix C**. **Appendix D** provides a list of species commonly found at Niagara Falls ARS.
34 **Appendix E** includes bird-aircraft strike hazard (BASH) program management considerations and
35 guidelines to decrease airfield attractiveness to birds. **Appendices F through J** present information
36 supporting the Operational Component Plans (OCPs) to be prepared for natural resources areas associated
37 with Niagara Falls ARS. **Appendices E through N** are set aside as “placeholders” for the inclusion of
38 information in support of the OCPs that might be prepared to implement specific management goals and
39 objectives for threatened and endangered species management, wetlands and floodplains management,

1 watershed protection, fish and wildlife management, grounds maintenance and land management, fire
2 ecology management, outdoor recreation and public access, and geographical information systems.

3 1.5 Approvals and Revisions

4 To ensure that this Plan properly addresses all aspects of the natural resources present on Niagara Falls
5 ARS and proposes actions that are in accordance with USAF goals and objectives, this Plan and all its
6 components are subject to approval by the Niagara Falls ARS ESOHC, the Installation's Natural
7 Resources Manager, and HQ AFRC. Similarly, all changes to be incorporated into this Plan must be
8 approved by the Installation Natural Resources Manager. In the event that a conflict cannot be resolved
9 by the Installation Natural Resources Manager, the Niagara Falls ARS ESOHC will be responsible for
10 attaining and implementing a resolution.

11 The SAIA requires that INRMPs must be reviewed for operation and effect no less than once every 5
12 years by the installation, the USFWS, and the state fish and wildlife agency (in this case, the NYSDEC).
13 This document should be reviewed annually to assess the suggested management practices in terms of
14 their appropriateness for current conditions at Niagara Falls ARS. In addition, the Plan should be updated
15 whenever there is a modification to the Installation's mission, or there is a substantial change to the
16 Installation's natural resources. The USFWS and NYSDEC should be informed whenever there is a
17 modification to the INRMP or there is a substantial change to natural resources, and consultation should
18 be initiated if an action could affect a federally- or state-listed species.

19 1.6 Responsible and Interested Parties

20 The INRMP Program has been organized to ensure the implementation of year-round, cost-effective
21 management activities and projects that meet the requirements of Niagara Falls ARS. Professionally
22 trained natural resources management staff and natural resources enforcement are required to implement
23 this INRMP. Sikes Act and Improvement Act (SAIA) Section 670g defines a "professional" as one who
24 has an undergraduate degree or graduate degree in a natural resources-related science. Existing Natural
25 Resources Office staff, Niagara Falls ARS personnel, and contracted personnel will be required to
26 implement this Plan. SAIA requires that if an Installation cannot retain a professional natural resources
27 staff, related Federal or state agencies be given the opportunity to assume these tasks. Responsibilities of
28 the various organizations on Niagara Falls ARS for the implementation of the INRMP are described in the
29 following subsections.

30 The INRMP was developed using an interdisciplinary approach, gathering information from a variety of
31 Installation organizations. Guidance was also solicited from several Federal, state, and local regulatory
32 agencies, including the USFWS, USDA-WS, NYSDEC, the NFTA, the New York Natural Heritage
33 Program, and the Audubon Society to ensure the accuracy of the data concerning natural resources on or
34 within the vicinity of the Installation, and the presentation of information in agreement with local and
35 regional management strategies. Correspondence with these agencies has been documented and will
36 satisfy the requirements of AFI 32-7061, The Environmental Impact Analysis Process and the provisions
37 of the SAIA (16 U.S.C. 670a et seq.). These varying perspectives allow for a more accurate portrayal of
38 the status and management needs of local ecosystems, while allowing Niagara Falls ARS to accomplish
39 its missions at the highest possible level of efficiency. As a result, the probable effects of Installation
40 operations on the surrounding natural resources allow for the development of possible operational
41 alternatives that could result in lessening impacts on the environment.

1 **1.6.1 INRMP Working Group**

2 The INRMP Working Group will be responsible for the overall implementation of the INRMP. The
3 INRMP Working Group consists of key Installation personnel (914 MSG/CEV, 914 AW/SE, and the 914
4 OG/OSA), USFWS, NYSDEC, USDA, and NFTA).. The Niagara Falls ARS Natural Resources Manager
5 shall chair this organization and shall establish subcommittees composed of Installation personnel, and
6 outside agencies to focus on high-level priority natural resources management issues such as threatened
7 and endangered species and fish and wildlife management. Top- and middle-level management
8 representation, as well as representation from several individuals with day-to-day on-Base field
9 experience, will provide the INRMP Working Group with the leadership and structure necessary for the
10 successful implementation of this INRMP.

11 **Niagara Falls ARS Personnel**

12 A number of Niagara Falls ARS personnel, including 914 MSG/CEV, 914 AW/SE, and the 914 OG/OSA,
13 have provided expertise vital to the creation of this interdisciplinary ecosystem-based natural resources
14 management plan. In addition, it will take a coordinated effort of many on-Base organizations and
15 personnel to implement the INRMP. These organizations will also play a vital role in the yearly review
16 of the management objective and natural resources topics of concern presented in this Plan.
17 Organizations in addition to the ones identified above can be solicited to aid in the 5-year evaluation and
18 rewrite of this Plan as required by SAIA should additional personnel and expertise be required.

19 **U.S. Fish and Wildlife Service**

20 The USFWS is a signatory agency of Installation INRMPs in accordance with the SAIA.
21 In addition, the DoD consults formally and informally with the USFWS on federally listed
22 species. The USFWS office with responsibility for NFARS is the New York field office
23 located in Cortland, New York.



24
25 **New York State Department of Environmental Conservation**

26 The NYSDEC, Division of Fish, Wildlife and Marine Resources, New York Natural
27 heritage Program is a signatory agency for this INRMP. The mission of the
28 department is "to conserve, improve and protect New York's natural resources and
29 environment and to prevent, abate and control water, land and air pollution, in order to
30 enhance the health, safety and welfare of the people of the state and their overall
31 economic and social well-being" (NYSDEC 2010).



32
33 **U.S. Department of Agriculture – Wildlife Services**

34 The mission of U.S. Department of Agriculture-Wildlife Services is “to provide
35 Federal leadership in managing problems caused by wildlife... [by] helping to solve
36 problems that occur when human activity and wildlife are in conflict with one
37 another” (USDA-WS 2009). The NFARS uses the services of the USDA Wildlife
38 Services to survey and assist in managing BASH issues. The USDA has been
39 involved in this program since 2004.



1 **Niagara Frontier Transportation Authority**



2 The mission of Niagara Frontier Transportation Authority is
3 “providing efficient and professional transportation services that
4 enhance the quality of life in the Buffalo Niagara region in a manner
5 consistent with the needs of...customers” (NFTA 2010).

6 The USFWS, NYSDEC, USDA-WS, and NFTA may provide technical assistance to Niagara Falls ARS.
7 Although not required, these agencies should alert the Niagara Falls ARS Natural Resources Manager
8 whenever new species are added to the Federal or state endangered species lists that have the potential for
9 inhabiting the Installation. These agencies also should support Niagara Falls ARS personnel during
10 scheduled wildlife and vegetation surveys. The USFWS, NYSDEC, USDA-WS, and NFTA should also
11 support the development of operational component plans to be developed in conjunction with
12 implementation of this INRMP. Support could be in the form of technical assistance, providing staff to
13 assist with surveys, or reviewing management plans developed by NFARS. Correspondence with these
14 agencies will satisfy the requirements of AFI 32-7061, The Environmental Impact Analysis Process and
15 the provisions of the Sikes Act (16 U.S.C. 670a et seq.).

16 **Beneficial Partnerships and Collaborative Resource Planning**

17 In accordance with the ecosystem management philosophy, NFARS is developing partnerships with
18 various agencies to support management of its natural resources. Major partners in implementing this
19 plan are the USFWS and the NYSDEC. Other partners include other DoD agencies, other Federal and
20 State agencies, universities, contractors, and private citizens. An emphasis of the INRMP is to strengthen
21 existing partnerships and to identify and develop new partnerships.

22 The USFWS is collaborating with private, state, and Federal agencies to establish a national network of
23 Landscape Conservation Cooperatives (LCC’s) that will provide scientific and technical support for
24 conservation at “landscape” scales. LCC’s will support biological planning, conservation design,
25 prioritizing and coordinating research, and designing species inventory and monitoring programs. As part
26 of this national network, the USFWS and partners are establishing the Upper Midwest and Great Lakes
27 (UMGL) LCC. The LCC includes portions of Minnesota, Iowa, Wisconsin, Illinois, Indiana, Michigan,
28 Ohio, Pennsylvania, New York, and Vermont; and areas of Manitoba, Ontario, and Quebec.

29 **1.7 NEPA Compliance and Integration**

30 **1.7.1 National Environmental Policy Act of 1969**

31 The National Environmental Policy Act, commonly known as NEPA, is a Federal statute requiring the
32 identification and analysis of potential environmental impacts of proposed Federal actions before those
33 actions are taken. NEPA established the Council on Environmental Quality (CEQ) that is charged with
34 the development of implementing regulations and ensuring Federal agency compliance with NEPA. CEQ
35 regulations mandate that all Federal agencies use a systematic interdisciplinary approach to environmental
36 planning and the evaluation of actions that can affect the environment. This process evaluates potential
37 environmental consequences associated with a proposed action and considers alternative courses of
38 action. NEPA requires informed decision making to prevent adverse environmental effects of proposed
39 Federal actions. The environment “shall be interpreted to include the natural and physical environment
40 and the relationship of people to that environment” (§1508.14).

1 The process for implementing NEPA is codified in Title 40 of the Code of Federal Regulations [CFR],
 2 Parts 1500-1508, *Regulations for Implementing the Procedural Provisions of the National Environmental*
 3 *Policy Act*. The CEQ was established under NEPA to implement and oversee Federal policy in this
 4 process. To this end, the CEQ regulations specify the following reasons that an Environmental
 5 Assessment (EA) be prepared:

- 6 • Briefly provide evidence and analysis for determining whether to prepare an Environmental
 7 Impact Statement (EIS) or a Finding of No Significant Impact (FONSI)
- 8 • Aid in an agency’s compliance with NEPA when an EIS is unnecessary
- 9 • Facilitate preparation of an EIS when one is necessary.

10 AFPD 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, state,
 11 and local environmental laws and regulations, including NEPA. The USAF’s implementing regulation
 12 for NEPA is the Environmental Impact Analysis Process (EIAP) (32 CFR Part 989) and AFI 32-7061.

13 1.7.2 INRMP and NEPA Integration

14 To comply with NEPA, the planning and decision-making process for actions proposed by Federal
 15 agencies involves a study of other relevant environmental statutes and regulations. The NEPA process,
 16 however, does not replace procedural or substantive requirements of other environmental statutes and
 17 regulations. It addresses them collectively in the form of an EA or EIS, which enables the decision-maker
 18 to have a comprehensive view of major environmental issues and requirements associated with the
 19 Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated “with
 20 other planning and environmental review procedures required by law or by agency so that all such
 21 procedures run concurrently rather than consecutively.” The adoption of an INRMP can be considered a
 22 major Federal action as defined by Section 1508.18 of the CEQ regulations. The HQ U.S. Air Force
 23 Integrated Logistics and Environment (USAF/ILEV) *Policy Memo for Implementation of Sikes Act*
 24 *Improvement Amendments* dated January 29, 1999, requires the preparation of an EA or EIS for the
 25 implementation of an INRMP, whichever is appropriate. For the purposes of implementing the Niagara
 26 Falls ARS INRMP, an EA has been chosen as the appropriate level of NEPA analysis, and is integrated as
 27 part of the INRMP. **Table 1-2** presents a “roadmap” of the NEPA analysis incorporated as part of this
 28 INRMP by providing the INRMP sections that correspond to the sections typically found in an EA.

29 **Table 1-2. Roadmap Indicating NEPA Analysis and Corresponding INRMP Sections**

Required NEPA Analysis	Corresponding INRMP Section
Executive Summary – briefly describes the Proposed Action, environmental consequences, and mitigation measures.	Executive Summary
Purpose of and Need for the Proposed Action – summarizes the Proposed Action’s purpose and need.	Section 1.8.4
Description of the Proposed Action and Alternatives – describes the Proposed Action of implementing the INRMP and alternatives to the implementation of the Proposed Action.	Sections 1.8.5
Scope of Analysis – describes the scope of the environmental impact analysis process.	Section 1.8.6

Affected Environment – describes the biotic environment and the general physical environment potentially affected by the Proposed Action within the scope.	Section 3
Environmental Consequences – identifies the potential environmental impacts of implementing the INRMP.	Section 6
Cumulative Effects – identifies effects on the environment that result from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place locally or regionally over a period of time.	Section 6.3
List of Preparers – identifies persons who prepared the document and their areas of expertise and training.	Section 7
References – provides a list of sources utilized in the preparation of the EA and INRMP.	Section 8
Agency Consultation Letters – copies of these letters and supplemental information used in the preparation of the EA.	Appendix B
Distribution List – indicates recipients of the EA.	Appendix F

1 1.7.3 Air Force Instructions

2 AFI 32-7064, *Integrated Natural Resources Management*, implements AFD 32-70 and DoDI 4715.3,
3 *Environmental Conservation Program* (3 May 1996), and DoDI 7310.5, *Accounting for Production and*
4 *Sale of Forest Products* (25 January 1988). It explains how to manage natural resources on Air Force
5 property in compliance with Federal, state, and local standards. The implementation of an INRMP
6 constitutes a potentially significant Federal action as defined in 40 CFR 1508.18 (b)(2). As such,
7 implementation of projects identified in the Plan could require consideration of potential environmental
8 effects as described in the EIAP (32 CFR Part 989) and AFI 32-7061.

9 1.7.4 Purpose of and Need for the Proposed Action

10 The Installation is proposing to implement the INRMP, which supports the management of natural
11 resources as prescribed by the Plan itself and satisfies the Memorandum of Understanding (MOU) and
12 SAIA requirements. The INRMP must be cooperatively developed with the USFWS and the state fish
13 and wildlife agency, which for NFARS is the NYSDEC. According to the SAIA, the primary purposes of
14 a military conservation program are conservation and rehabilitation of natural resources, sustainable
15 multipurpose use of those resources, and public access to military lands, subject to safety requirements
16 and military security. Moreover, the conservation program must be consistent with the mission-essential
17 use of the installation and its lands. The purpose of the Proposed Action is to carry out the set of
18 resource-specific recommended management strategies developed in the INRMP, which would enable the
19 Installation to effectively manage the use and condition of natural resources located on the Installation.
20 The need for the Proposed Action is to satisfy the MOU and SAIA requirements. The resulting plan
21 reflects the mutual agreement of all three parties concerning conservation, protection, and management of
22 natural resources on the installation.

1 **1.7.5 Description of the Proposed Action and Alternatives**

2 **Proposed Action.** Niagara Falls ARS proposes to implement an INRMP, which supports the
3 management of natural resources as described by the Plan itself. The purpose of the Proposed Action is
4 to carry out the set of resource-specific management measures developed in the INRMP. This would
5 enable Niagara Falls ARS personnel to protect the natural setting by effectively managing the use and
6 condition of natural resources on the Installation. Implementation of the Proposed Action would support
7 Niagara Falls ARS’s continuing need to ensure the safety and efficiency of the flying mission on the
8 Installation while practicing sound resource stewardship and complying with environmental policies and
9 regulations.

10 The Proposed Action supports an ecosystem approach and includes natural resources management
11 measures to be undertaken on Niagara Falls ARS, New York. The Proposed Action focuses on a 5-year
12 planning period, which is consistent with the timeframe for the management measures described in the
13 INRMP. This planning period would begin in Fiscal Year (FY) 2012 and end in FY 2017. Additional
14 environmental analysis could be required as new management measures are developed over the long term
15 (i.e., beyond 5 years).

16 **Alternatives.** The development of proposed management measures for the INRMP included a screening
17 analysis of resource-specific alternatives. The screening analysis involved the use of accepted criteria,
18 standards, guidelines, and best professional judgment to identify management practices for achieving
19 Niagara Falls ARS natural resources management objectives. The outcome of the screening analysis led
20 to the development of the Proposed Action as described above. Consistent with the intent of NEPA, this
21 screening process focused on identifying a range of reasonable resource-specific management alternatives
22 and, from that, developing a plan that could be implemented, as a whole, in the foreseeable future.
23 Management alternatives deemed infeasible were not analyzed further. As a result of this screening
24 process, this EA, which has been included as integral part of this INRMP, formally addresses two
25 alternatives: the Proposed Action (i.e., implementation of the INRMP) and the No Action Alternative.

26 **No Action Alternative.** Implementation of the No Action Alternative would mean that the proposed
27 management measures set forth in the INRMP would not be implemented. Current management
28 measures for natural resources would remain in effect and existing conditions would continue. This
29 document refers to the continuation of existing (i.e., baseline) conditions of the affected environment,
30 without implementation of the Proposed Action, as the No Action Alternative. The No Action
31 Alternative serves as a benchmark against which Federal actions can be evaluated. Inclusion of a No
32 Action Alternative is prescribed by CEQ regulations and, therefore, will be carried forward for further
33 analysis.

34 **1.7.6 Scope of Analysis**

35 The potential environmental effects associated with the Proposed Action are required to be assessed in
36 compliance with NEPA, regulations of the CEQ, and AFIs 32-7061 and 32-7064. This analysis identifies,
37 documents, and evaluates the effects of implementing the INRMP for NFARS. The INRMP addresses
38 the geographical area associated with Niagara Falls ARS, New York. As discussed, this EA examines
39 Niagara Falls ARS’ preferred alternative and the No Action Alternative. The document analyzes
40 potential environmental effects associated with implementation of the Preferred Alternative and the No
41 Action Alternative. Mitigation measures are also identified, where appropriate. The potential effects
42 associated with the Proposed Action and No Action Alternative are discussed in **Section 6**.

1 The objective of this document is to provide an implementable INRMP that guides the Installation in the
2 following activities:

- 3 • Achieving natural resources management goals consistent with an ecosystems approach to
4 management
- 5 • Meeting legal and policy requirements, including those associated with NEPA, which are
6 consistent with current natural resources management philosophies.

7 In order to meet this objective, an interdisciplinary team of environmental scientists, biologists, planners,
8 archaeologists, and military technicians developed the EA. The team identified the affected environment,
9 analyzed the Proposed Action against existing conditions, and determined the potential beneficial and
10 adverse effects associated with both the Proposed Action and the No Action Alternative.

2. Installation Location and Mission

Current and historic information pertaining to land uses at the Installation and in surrounding communities is necessary to properly manage natural resources and assess future management activities. This section describes the location of Niagara Falls ARS and the surrounding community, including natural areas. A brief history of the Installation and its current mission is also presented.

2.1 Location and Surrounding Area

Niagara Falls ARS is located in northwestern New York in Niagara County. Niagara County encompasses 533 square miles and is bordered to the north by Lake Ontario; to the east by Genesee and Orleans counties; to the south by Erie County; and to the west by the City of Niagara Falls, the Niagara River, and Canada (see **Figure 2-1**). Niagara Falls ARS is approximately 6 miles east of the City of Niagara Falls, and 20 miles north of the City of Buffalo. The Installation lies 580 feet above sea level, and is approximately 4 miles east and 1.5 miles north of the Niagara River. Lake Ontario is approximately 12 miles north of the Installation, and Lake Erie is approximately 15 miles south of the Installation. The Installation is adjacent to the Niagara Falls International Airport (NFIA) and makes use of their runways and facilities (NFARS 1995). The boundary between the airport and the Station coincides with the channel of Cayuga Creek, which flows from east to west just south of the aircraft parking ramp (see **Figure 2-2**).

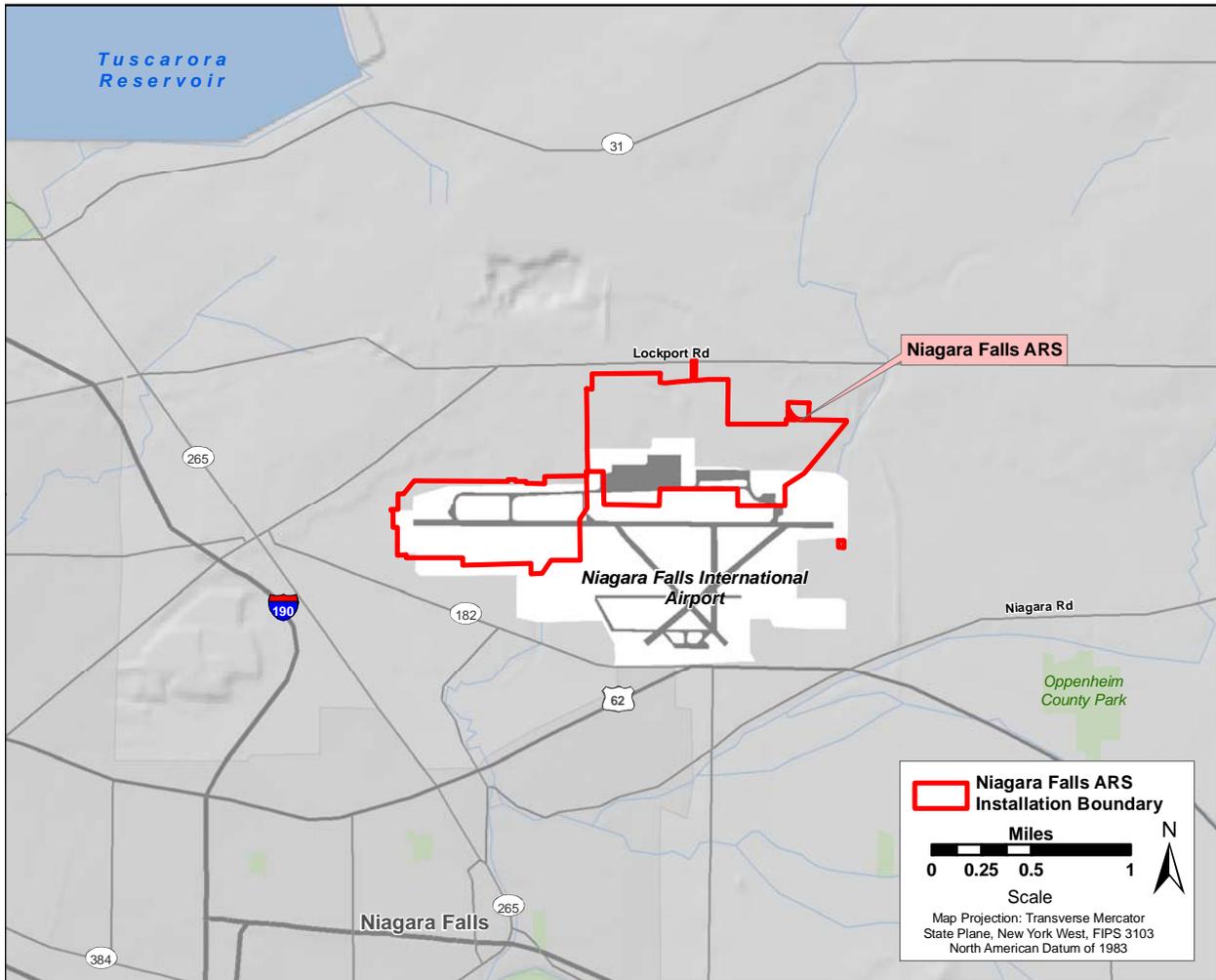
The Installation occupies 985 acres, 503 acres are owned by Niagara Falls ARS, 76 acres are leased, and the remainder is easement, or public domain (NFARS 1999). Adjacent communities include Lockport, Wheatfield, North Tonawanda, Tonawanda, and Amherst. The Niagara Falls ARS is bordered to the north by Lockport Road, to the east by Walmore Road, to the south by NFIA and private property, and to the west by private property (914 TAG & 107 FIG 1990).

The eastern portion of the Installation is in the Town of Wheatfield while the western portion of the Installation is in the Town of Niagara. The Installation and immediately surrounding land in the Town of Wheatfield are zoned Industrial, whereas the Installation and immediately surrounding land in the Town of Niagara are zoned Light Industrial and Heavy Industrial (NFARS 1996). Two large industries, Bell Aerospace Company and Carborundum Company, are southeast of the Installation.

The predominant zoning classification around the Installation is residential/industrial. The Installation is surrounded by agricultural land to the north and east, while open space, wetlands, and brush cover are to the east and west of the Installation. Several residential subdivisions are south and southwest of the Installation, and industrial areas are scattered both west and southeast of the Installation. Northwest of the Installation is a large tract of industrially zoned land currently used for agricultural purposes (NFARS 1999).

2.2 Installation History

In 1942, the municipal airport leased 468 acres of land to the U.S. government for use by the Army Air Corps. In the same year, the 339th Bomb Group (Dive) was activated. Four years later, 132.2 acres of the original leased land was returned to the municipal airport, and the 339th Bomb Group was redesignated the 107th Fighter Group. The remaining acreage was allotted to the New York Air National Guard. Stationed at the U.S. Naval Air Station, Municipal Airport, Niagara Falls, New York, they flew F-47 Thunderbolts with an Air Defense mission.



1 Source: ESRI StreetMap USA 2007

2 **Figure 2-1. Niagara Falls ARS and the Surrounding Region**

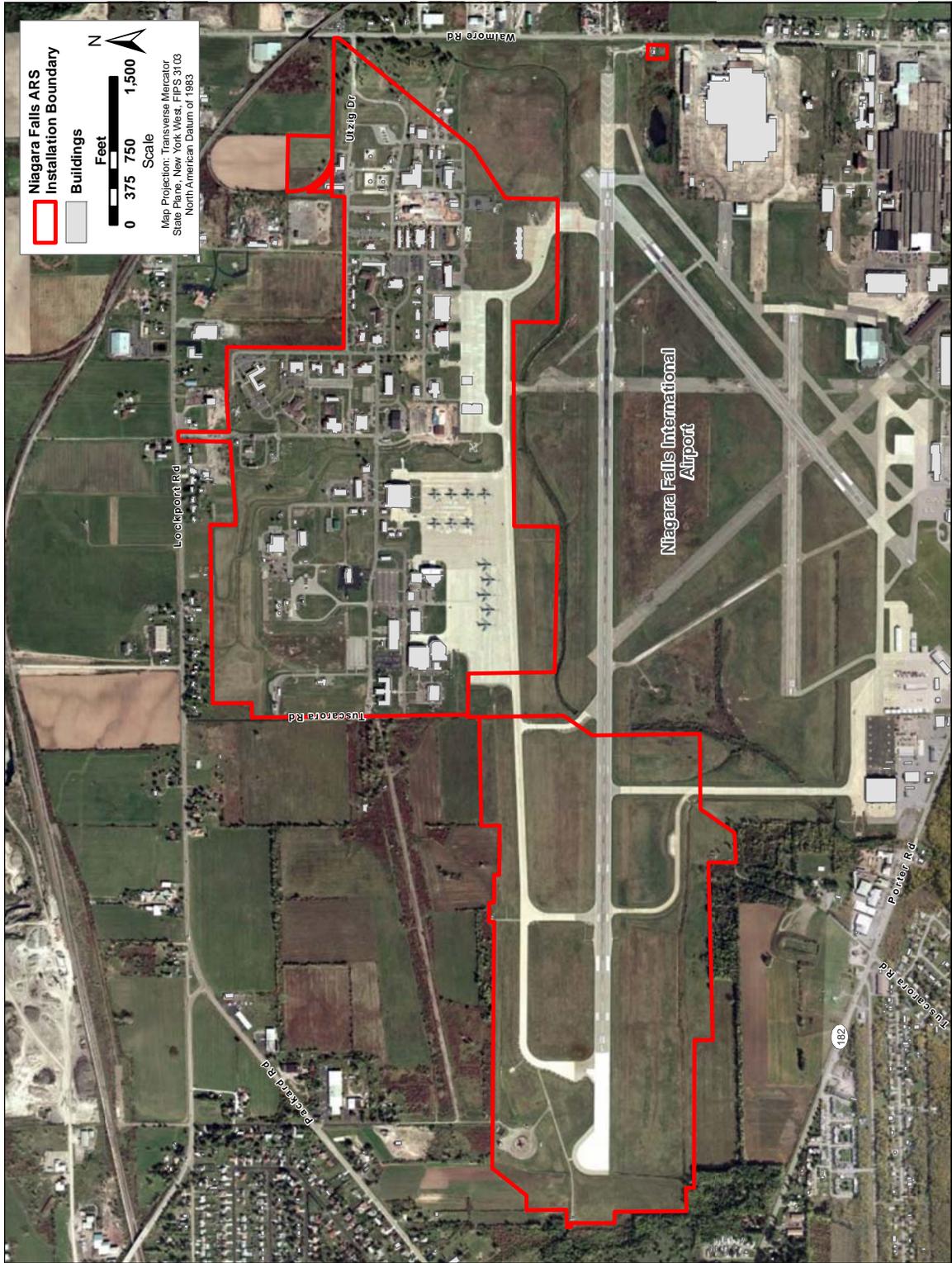


Figure 2-2. Niagara Falls ARS Installation Map

1 The 136th Fighter Interceptor Squadron (FIS) of the New York Air National Guard (NYANG) was
2 established in 1948, occupying Old Camp Bell, directly opposite the Bell Aircraft Corporation Plant. In
3 1952, the 136th FIS was called to active duty and assigned to the Air Defense Command. At this time,
4 the 76th Air Base Squadron (ABS) was activated at Niagara Falls to allow the 136th FIS more freedom to
5 perform its mission of around-the-clock air defense. In the next year, the 518th Air Defense Group
6 (ADG) replaced the 76th ABS, and the 47th FIS replaced the 136th FIS. In 1955, Air Force reactivations
7 brought the 15th Fighter Group to Niagara Falls to replace the 518th ADG. The NORAD System
8 CIM-10B BOMARC missile was brought to the Installation in 1959, and the 35th Air Defense Missile
9 Squadron was activated to maintain the BOMARC missiles.

10 After the missile area deactivation in the late 1960s, the 107th Tactical Fighter Group (TFG) of the
11 NYANG became the main tenant organization, occupying the western portion of the Installation. In
12 1960, the 15th Fighter Group was deactivated, and the 4621st Support Group began operations at the
13 Installation. In 1963, the 914 AW, known as the 914th Troop Carrier Group at the time, was a Reserve
14 unit assigned to Niagara Falls. In 1967, the group was redesigned as a Tactical Airlift Group (TAG) with
15 its 328th Tactical Airlift Squadron. The 4621st was redesignated as the 4621 ABS in 1964. In 1970, the
16 4621st ABG was deactivated and the 914th Airlift Wing (914 AW) Tactical Airlift Squadron began
17 converting from C-119 to C-130A aircraft. Detachment 1, 49th FIS of the ANG, became the Installation
18 host until January 1971. Later in that year, the 914th TAG of the Air Force Reserve assumed command
19 of the Installation. At that time, Niagara Falls was the only Reserve Base in the State of New York
20 (NFARS 1990).

21 The 914 AW flew C-130A model aircraft until 1986 when it converted to the C-130E model. In 1994,
22 with the departure of the 107th Air Refueling Wing's last ADF-16 Falcon, a 52-year history of flying
23 fighter aircraft ended. In March of that year, the unit marked the official start in the conversion to the
24 KC-135R (107 ARW 1996). In 1995, the 107th Air Refueling Wing (107 ARW) converted from
25 18 F-16A/B fighter jets to 9 KC-135R Stratotanker aircraft. This aircraft conversion changed the mission
26 of the 107th from a fighter group to an air refueling unit, and the unit was redesignated as a wing in
27 October 1995 (107 ARW 1996). In 2008, the 107 ARW converted to the C-130H3 aircraft and the unit
28 began its new mission as an airlift wing in association with the 914th Airlift Wing (107 AW undated).

29 2.3 Current Military Mission

30 The primary mission of Niagara Falls ARS is to support the 914 AW, an AFRC unit that organizes,
31 recruits, and trains Air Force Reservists while providing operationally ready aircraft, crews, and support
32 personnel for training and worldwide deployment missions. The 914 AW is the host unit at Niagara Falls
33 ARS, New York.

34 The 914 AW is assigned 12 C-130H transport aircraft that perform diverse roles, including airdrop of
35 supplies, airlift support, aeromedical missions, and natural disaster relief missions. The major tenant at
36 Niagara Falls ARS is the 107 AW of the NYANG, an associate wing to the 914 AW.

37 2.4 Proximity to Local Natural or Historic Areas

38 Niagara Falls ARS is in close proximity (within 3 miles) to only one historic area, the Town of Lockport.
39 This town is known primarily for its cobblestone buildings. However, activities at Niagara Falls ARS
40 should have minimal effects on this town. Oppenheim Park is approximately 2 miles southeast of
41 Niagara Falls ARS, and houses a stocked lake for fishing opportunities, and numerous covered areas for
42 picnics. According to the park's Master Plan, wildlife habitat is presently being enhanced for species that
43 are acclimated to an urban environment, such as deer, raccoon, gray squirrels, and mallard ducks.

1 The Niagara River, approximately 4 miles west and 1.5 miles south of the Installation, has recently been
2 named a Globally Important Bird Area by the National Audobon Society, the Canadian Nature
3 Federation, Bird Studies Canada, the American Bird Conservancy, and Partners in Flight (Wells 1997).
4 The Globally Important Bird Areas program is an international initiative to identify and conserve habitats
5 critical to the long-term survival of bird populations. The Niagara River Corridor was the first site to be
6 dedicated jointly as a Globally Important Bird Area by cooperating organizations in the United States and
7 Canada. The Niagara River is a critical feeding area for numerous avian species as they migrate from
8 their Canadian breeding grounds to their U.S. and Mexican wintering areas. Approximately one-third of
9 the world's population of Bonaparte's gulls (*Larus philadelphia*) passes through the Niagara River
10 corridor during their winter migration. From mid-September through mid-April, as many as
11 100,000 individual gulls representing up to 19 species are supported along the Niagara River. During this
12 same time period, more than 34 species of waterfowl can be present. The Niagara River serves as the
13 largest wintering area for canvasbacks (*Aythya valisineria*) in New York State. The Niagara River is also
14 believed to be an extremely important migratory corridor for land birds, supporting breeding populations
15 of several rare species, including the upland sandpiper (*Bartramia longicauda*) and the grasshopper
16 sparrow (*Ammodramus savannavum*). The Globally Important Bird Area program will assemble a
17 diverse group of stakeholders to establish a conservation plan for the Niagara River.

18 The Niagara Falls Browning Ferris Industries (BFI) Landfill is approximately 4 miles west of Niagara
19 Falls ARS. In a partnership with Maryland's Wildlife Habitat Council, the BFI Landfill began to employ
20 practices, including planting native trees and utilizing specific mowing regimes, to create or enhance
21 habitat for grassland birds and small mammals. A 1996 spring inventory indicated that four out of seven
22 targeted species for which habitat was enhanced were found at the managed areas of the landfill. In
23 addition, the BFI Landfill has erected kestrel and bluebird boxes to promote nesting of these species.

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3. Affected Environment

3.1 General Physical Environment

This section presents a description of the general physical environment of the Installation, including discussions of the regional climate, grounds categories, topography, geology, soils, and the Installation's watersheds and drainage patterns.

3.1.1 Climate

Niagara Falls ARS is adjacent to Lakes Ontario and Erie. Air flows from the south-southwest, bringing moist air from the Atlantic or Gulf of Mexico. Temperature extremes, both high and low, are moderated by the presence of the lakes. In the fall and winter, these bodies of water serve to warm the air to some extent, extending the growing season and reducing the lower extremes of temperature. During the spring and summer, the lakes slow warming of the region and moderate high summer temperatures.

The average annual temperature at Niagara Falls ARS is 47.6 degrees Fahrenheit (°F). The area experiences pleasantly warm summers and long cold winters. July is the warmest month of the year, with an average high of 81 °F and an average low of about 60 °F. The summer (June through September), in general, has average high temperatures in the low to mid 70s. January is the coldest month of the year, with mean daily highs and lows of 30 °F to 16 °F, respectively. The winter (November through March), in general, has average low temperatures in the mid teens to low 20s and average high temperatures in the mid 30s to low 40s (NFARS 2007).

Niagara Falls ARS receives an average of 37 inches of precipitation per year. Precipitation is fairly well distributed throughout the year, with monthly averages ranging from 3.7 inches in September to 2.3 inches in February. High humidity levels occur throughout the year, ranging from 70 to 80+ percent (NFARS 2007).

3.1.2 Grounds Categories

Niagara Falls ARS lies in a suburban environment occupying 985 acres, with 503 acres owned by Niagara Falls ARS, 76 leased, and the rest in easement or public domain. **Figure 3-1** is a map of Niagara Falls ARS detailing the distribution of improved, semi-improved, and unimproved grounds on the Installation.

Improved grounds are developed areas of the Installation that have either an impervious surface (e.g., streets, sidewalks, and buildings, excluding runway and apron areas) or lawns and landscape plantings that require intensive maintenance and upkeep. Grounds areas around housing units, dormitories, administrative areas, and industrial areas, and parks, playgrounds, athletic fields, parade grounds, and golf courses are considered improved grounds. Improved grounds at Niagara Falls ARS account for approximately 40 percent of the Installation, whereas semi-improved grounds occupy approximately 60 percent of the Installation. These are grounds where periodic maintenance activities are performed for operational or aesthetic reasons. Semi-improved grounds also include runways and apron areas. Unimproved grounds occupy a minimal portion of the Installation, and include Cayuga Creek and its bed and banks.

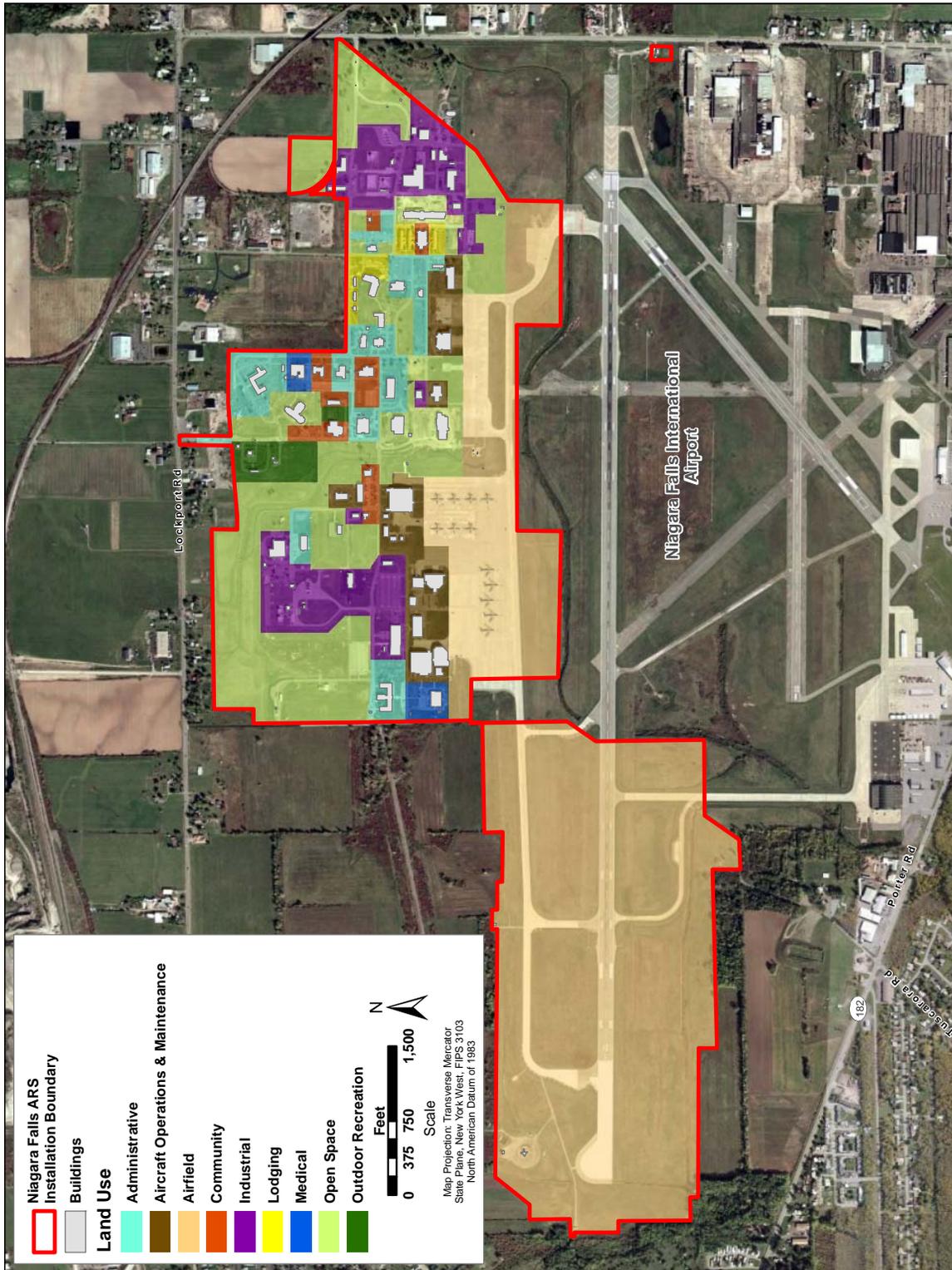


Figure 3-1. Map of Improved, Semi-Improved, and Unimproved Grounds at Niagara Falls ARS

3.1.3 Topography, Geology, and Soils

The topography of Niagara Falls ARS is flat to gently sloping, with elevations ranging from 578 to 600 feet above sea level. The Installation is in the Niagarian Provincial series, in the eastern lake section of the Central Lowland physiographic province. The Niagarian Provincial series is “richly fossiliferous” with 400 feet of deposits, including dolomite, limestone, shale, and sandstone, from diverse environments ranging from nonmaritime sandstones to deepwater shales (Brett et al. 1995).

USDA’s NRCS mapped and classified the Installation’s soils in 2006. The Installation occupies level to gently sloping land areas dominated by two soils mapping units. Primary soil series within these mapping units are the Odessa silty clay loam and the Lakemont silty clay loam. These soils formed in glacial material deposited during and shortly after the ice age (the Pleistocene epoch). The Odessa soil, a moderately fine textured soil, covers a majority of the area to the north of Cayuga Creek. It is somewhat poorly drained, has moderately slow permeability, and a seasonably high water table at 6 to 12 inches below the surface. The rest of the Installation is covered by the Lakemont series soils, a moderately coarse and medium-textured soil that is poorly to very poorly drained, has moderately slow permeability at the surface layer, has slow permeability in the subsoil, and a seasonally high water table at or immediately below the surface. The water holding capacity of both soils is high, and the erosion potential is slight (NRCS 2006). Approximately half of the area, however, is overlain by pavement and other impermeable structures.

The Lakemont silty clay loam phase of the Lakemont series is designated as a hydric soil. Hydric soils are soils that are saturated, flooded, or ponded for long enough during the growing season to develop anaerobic (oxygen-deficient) conditions in their upper part. Anaerobic soil conditions are conducive to the establishment of vegetation that is adapted for growth under oxygen-deficient conditions and is typically found in wetlands (hydrophytic vegetation). The presence of hydric soil is one of the three criteria (hydric soils, hydrophytic vegetation, and wetland hydrology) used to determine that an area is a wetland based on the USACE *Wetlands Delineation Manual*, Technical Report Y-87-1 (USACE 1987). See the discussion of wetlands in **Section 3.2.3**.

3.1.4 Watersheds and Drainage Patterns

The topography in the vicinity of the Station is flat, dipping slightly to the south, with extremes in elevation of about 578 to 600 feet above mean sea level. All surface water ultimately drains from the Station into Cayuga Creek. Cayuga Creek is a relatively small, low-gradient warm water stream. Cayuga Creek begins in Lewiston, New York, and flows generally south through the Niagara Falls ARS and the NFIA (in the Towns of Wheatfield and Niagara), through the City of Niagara Falls, and empties into the Niagara River. Cayuga Creek and its tributary are the primary waterways on the Niagara Falls ARS property and all storm water discharges empty into them. There are seven storm water outfalls that discharge from Niagara Falls ARS into Cayuga Creek. Outfall 1 is in the northeastern corner of the station with a drainage area of 4.1 acres. Outfalls 2 and 3 are at the eastern end of the station with a drainage area of 14 acres and they include runoff from the Petroleum-Oil-Lubricant Complex. Outfall 4 has a drainage area of 62.9 acres that includes the base supply, vehicle fuel station, and vehicle maintenance activities. Outfall 5 has a drainage area of 572.4 acres and discharges near the confluence of an unnamed tributary and Cayuga Creek. Outfall 5 also receives discharges from Lockport Road and a quarry located north of the Station. Outfall 6 has a drainage area of 53.4 acres and drains most of the 107 AW facilities. The aircraft deicing pad is in this drainage area. Outfall 7 is an open ditch that drains the southwestern section of the Niagara Falls ARS (NFARS 2005). **Table 3-1** provides characteristics for each of the drainage areas that discharge to Cayuga Creek.

1 **Table 3-1. Storm Water Outfalls and Drainage Area Characteristics at Niagara Falls ARS**

Outfall	Total Drainage Area (Acres)	Impervious Area (Acres)	Percent Impervious (%)
1	4.1	0.9	22
2	9.2	3.7	40
3	4.8	2.4	50
4	62.9	18.4	63
5	572.4	78.8	14
6	53.4	24.5	46
7	233.7	193.8	83

Source: NFARS 2005

2 **3.2 General Biotic Environment**

3 This section presents a description of the general biotic environment of the Installation and the
4 surrounding area, including discussions of the historic and current native vegetative cover, the native
5 fauna on the Installation, fisheries and wildlife habitats, and threatened and endangered species.

6 **3.2.1 Historic Vegetative Cover**

7 Niagara Falls ARS lies within the Beech-Maple Forest Section of the Eastern Deciduous Forest Province
8 (Bailey 1995). This ecoregion is characterized by temperate deciduous forests. It is dominated by tall,
9 broadleaf trees that provide a continuous and dense canopy in summer, but shed their leaves completely
10 in winter. The area that is now Niagara Falls ARS was originally a mixed hardwood forest. The forest
11 was logged during the 1800s and cleared for agricultural uses, such as row crops, small grains, forage
12 grasses, and pasture. Farming and urban development have resulted in very limited forest acreage in the
13 vicinity of the Installation.

14 **3.2.2 Current Vegetative Cover**

15 The Niagara Falls ARS is approximately 985 acres and is in the Towns of Niagara and Wheatfield,
16 Niagara County, New York. Within the facility, 161 acres are classified as land under runways and
17 buildings, 226 acres are classified as improved lands (lawns and landscaped), 237 acres are classified as
18 semi-improved land (periodic mowing), and 361 acres are classified as unimproved land (vegetative
19 cover). Five distinct vegetative communities have been identified including successional field,
20 successional shrubland, successional shrub/forest, wet meadow wetland, and riparian wetland
21 (NFARS 2001b). The successional fields are dominated by herbaceous/grassland plant species with some
22 woody growth. The wet meadow wetland areas consist of several wet meadow swales that generally run
23 in an east-west direction across the Installation and eventually flow into a large wetland area at the
24 westernmost portion of the Installation, composing a portion of the semi-improved lands. The areas

1 defined as riparian wetland community consists of Cayuga Creek and its associated floodplain, and
2 several drainage ditches, and compose a portion of the unimproved lands (NFARS 2003).

3 Most of the Installation is urbanized and the original vegetation has been removed or significantly altered
4 by development, construction, landscaping, and other disturbances. Consequently, there is very little
5 opportunity for historic native plant communities to occur on Niagara Falls ARS. The area most likely to
6 harbor isolated occurrences of native vegetation is the bed and banks of Cayuga Creek, which has been
7 relatively undisturbed in recent years. In addition, the southern portion of the southwestern area which
8 contains a segment of the New York State Freshwater Wetland TW-1, has also been relatively
9 undisturbed (mowed at least once a year in accordance with an existing NYSDEC permit) and might
10 harbor some remnant native vegetation. However, these areas support chiefly successional communities
11 and do not contain unique native vegetative species. There have been no observations made of any
12 historically significant or unique native vegetative species occurring on Niagara Falls ARS.

13 Turf grasses and various broadleaf weeds are the predominant vegetation type on Niagara Falls ARS.
14 Grass varieties consist of common introduced species, including Kentucky bluegrass (*Poa pratensis*), tall
15 fescue (*Festuca arundinacea*), orchardgrass (*Dactylis glomerata*), Italian ryegrass (*Lolium multiflorum*),
16 red top (*Agrostis alba*), creeping red fescue (*Festuca rubra*), colonial bent grass (*Agrostis tenuis*), and
17 timothy (*Phleum pratense*). A variety of shrubs and trees, mostly introduced species, are also present on
18 Niagara Falls ARS. Shrub species that are common on the Installation include blue pfitzer juniper
19 (*Chinesis glauca hetzel*), pyramidal yew (*Taxus caspidata capitata*), and spreading yew (*Taxus*
20 *caspidata*). Tree species that are common on the Installation include white pine (*Pinus strobus*), Scotch
21 pine (*Pinus sylvestris*), green ash (*Fraxinus lanceolata*), red maple (*Acer rubrum*), and Lombardy poplar
22 (*Populus nigra italica*).

23 The unnamed tributaries that feed into Cayuga Creek are artificial waterways constructed for the drainage
24 of adjacent lands. Water levels in these tributaries fluctuate in response to variations in precipitation and
25 groundwater levels. The sides of these drainageways are vegetated and are dominated by grasses, sedges,
26 and weedy and exotic species. Purple loosestrife (*Lythrum salicaria*), reedgrass (*Phragmites australis*),
27 reed canary grass (*Phalaris arundinacea*), sedges (*Carex* spp.), and cattails (*Typha* spp.) are present.

28 3.2.3 Wetlands and Floodplains

29 Wetlands provide habitat to numerous insects and other invertebrates, which are often eaten by small
30 mammals, birds, and other animals that require flowing or standing water. Wetlands are also home to
31 many federally and state-listed threatened and endangered species. In addition to providing habitat,
32 wetlands function to absorb and attenuate floodwaters, to transform and retain nutrients and toxicants, to
33 trap sediments, to provide production export to downstream waters, and to play a role in groundwater
34 discharge and recharge.

35 The USACE defines wetlands as “those areas that are inundated or saturated with ground or surface water
36 at a frequency and duration sufficient to support, and that under normal circumstances do support, a
37 prevalence of vegetation typically adapted to life in saturated soil conditions.” Wetlands generally
38 include swamps, marshes, bogs, and similar areas (33 CFR 328). Wetlands are considered an important
39 natural system because of the diverse biological and hydrologic functions they are known to perform.
40 These functions can include water quality improvement, groundwater recharge, pollution treatment,
41 nutrient cycling, provision of wildlife habitat, niches for unique flora and fauna, storm water storage, and
42 erosion protection.

43 Wetlands are protected as a subset of the “waters of the United States” under Section 404 of the Clean

1 Water Act (CWA). The term “waters of the United States” has broad meaning under the CWA and
2 incorporates deepwater aquatic habitats and special aquatic habitats (including wetlands). “Jurisdictional”
3 waters of the United States are areas regulated under the CWA and can include coastal and inland waters,
4 lakes, rivers, ponds, streams, intermittent streams, and “other” waters that if degraded or destroyed could
5 affect interstate commerce. Section 404 of the CWA authorizes the Secretary of the Army, acting through
6 the Chief of Engineers, to issue permits for the discharge of dredged or fill materials into the waters of the
7 United States, including wetlands. Therefore, even an inadvertent encroachment into wetlands or other
8 “waters of the United States” resulting in displacement or movement of soil or fill materials has the
9 potential to be viewed as a violation of the CWA if an appropriate permit has not been issued by the
10 USACE. In New York, the USACE has primary jurisdictional authority to regulate wetlands and waters
11 of the United States.

12 In addition, wetlands are protected under Executive Order (EO) 11990, Protection of Wetlands
13 (43 FR 6030), the purpose of which is to reduce adverse impacts associated with the destruction or
14 modification of wetlands. The MAJCOM/CC must sign a finding of no practicable alternative (FONPA)
15 before any action within a Federal wetland may proceed as specified in Secretary of the Air Force Order
16 780.1. In preparing a FONPA, the Installation must consider the full range of practicable alternatives
17 which will meet justified program requirements, are within the legal authority of the USAF, meet
18 technology standards, are cost-effective, do not result in unreasonable adverse environmental impacts,
19 and other pertinent factors. Once the practicality of alternatives has been fully assessed, a statement
20 regarding the FONPA should be made into the associated FONSI, signed by the Base Commander, or
21 record of decision (ROD).

22 Wetlands are also protected in New York State under Article 24 of the New York Environmental
23 Conservation Law, commonly known as the Freshwater Wetlands Act (the Act or Article 24). Freshwater
24 wetlands, as defined by the Act, are wetland areas 12.4 acres or larger (except under special
25 circumstances). The Act protects the wetland as well as 100 feet of protective buffer surrounding it.

26 As a result of the above-mentioned state and Federal regulations, it is the responsibility of the USAF to
27 identify and locate jurisdictional waters of the United States (including wetlands) occurring on USAF
28 Installations where these resources have potential to be impacted by Installation activities. Such impacts
29 could include construction of roads, buildings, runways, taxiways, navigation aids, and other appurtenant
30 structures; or activities as simple as culvert crossings of small intermittent streams, rip-rap placement in
31 stream channels to curb accelerated erosion, and incidental fill and grading of wet depressions.

32 Floodplains are defined as areas adjoining inland or coastal waters that are prone to flooding. Floods are
33 usually described in terms of their statistical frequency. A 100-year flood or 100-year floodplain
34 describes an event or an area subject to a 1% probability of a certain size flood occurring in any given
35 year. This does not mean a similar flood will occur only once in one hundred years. Whether or not it
36 occurs in a given year has no bearing on the fact that there is still a 1% chance of a similar occurrence in
37 the following year. Since floodplains can be mapped, the boundary of the 100-year flood is commonly
38 used in floodplain mitigation programs to identify areas where the risk of flooding is significant. These
39 areas must be reserved in order to discharge the 100-year flood without cumulatively increasing the water
40 surface elevation more than a designated height. Once a floodplain is established, no additional
41 obstruction (e.g., building) should be placed in the floodplain that will increase the 100-year floodwater
42 surface elevation.

43 EO 11988, Floodplains Management, requires all Federal agencies to provide leadership and take action
44 to reduce the risk of flood loss; minimize the impacts of floods on human safety, health, and welfare; and
45 restore and preserve the natural and beneficial values of floodplains when acquiring, managing, or
46 disposing of Federal lands. The MAJCOM/CC must sign a FONPA before any action within a floodplain

1 may proceed, as specified in Secretary of the Air Force Order 790.1. When the practicality of alternatives
2 has been fully assessed, only then should a statement regarding the FONPA be made into the associated
3 FONSI, signed by the Base Commander, or ROD.

4 In addition, if action is taken that permits an encroachment within the floodplain that alters the flood
5 hazards on a National Flood Insurance Rate Map (FIRM) (i.e., changes to the floodplain boundary),
6 Niagara Falls ARS must submit an analysis reflecting those changes to the FIRM. Federal Emergency
7 Management Agency (FEMA) headquarters can be contacted at 202-646-3461 to obtain booklet MT-2,
8 *Revisions to National Flood Insurance Program Maps*, for further guidance.

9 3.2.3.1 Wetlands at Niagara Falls ARS

10 Wetlands on the Installation were identified following the procedures defined in the 1987 USACE
11 *Wetlands Delineation Manual* (USACE 1987). Delineation of jurisdictional wetlands was based on the
12 occurrence of the following three parameters: hydrophytic vegetation, hydric soils, and wetland
13 hydrology. A letter from the USACE Buffalo District states that this delineation is valid for 5 years from
14 October 2003. An updated wetland delineation for Niagara Falls ARS was completed in 2008 and a
15 jurisdictional determination from the USACE was issued on 10 November 2009 (USACE 2009).

16 State Wetland TW-1 is a 72-acre palustrine emergent and scrub-shrub wetland located along the west end
17 of the runway. NYSDEC last delineated portions of TW-1 within NFARS in December 1992 and outside
18 NFARS in November 2004. The portion of State Wetland TW-1 and its 100-foot buffer located within
19 NFARS is periodically mowed to control succession and prevent woody shrubs and trees from
20 establishing in the overrun area of Runway 10L-28R (NFARS 2010).

21 A total of 29.0 acres of wetlands and 14,792 linear feet of tributaries were identified and delineated at
22 NFARS. Of the 16 wetlands delineated, nine were confirmed to be Federal jurisdiction wetlands
23 (Wetlands A, B, D, H, M, I, W, X, and Z) and totaled 28.43 acres. This represents an 8.47 acre decrease
24 from the total acreage of Federal jurisdiction wetlands reported in 2003. In addition, the waters connected
25 to these wetlands are also jurisdictional. These include: Tributary 1, Wetland A tributary (Tributary 2),
26 Wetland B/D tributary (Tributary 3), Wetland O tributary (Tributary 4), and wetland W tributary, totaling
27 14,792 linear feet. The remaining six wetlands (Wetlands J, L, LA, P, X2 and X3) were determined to be
28 non-Federal jurisdiction waters because they were not connected to traditional navigable waters. The non-
29 Federal jurisdiction wetlands totaled 0.50 acres. This Federal jurisdictional determination is valid through
30 10 November 2014 (NFARS 2010).

31 Most delineated wetlands (Wetlands A, B, D, H, I, J, L, LA, M, O, and P) are clustered around the
32 southwest portions of NFARS, and classified as palustrine emergent or scrubshrub wetlands. Although
33 impacted by site maintenance (e.g. mowing or drainage channel clearing) and historic filling and grading
34 activities, these wetlands provide important ecological functions and values including floodflow
35 alteration, groundwater recharge/discharge, and wildlife habitat. The proximity of these wetlands to
36 grasslands and other wetlands including State Wetland TW-1 also provide wildlife with corridors and
37 refuge away from airfield runways and taxiways (NFARS 2010).

38 3.2.3.2 Floodplains at Niagara Falls ARS

39 Proposed 2008 FEMA FIRMs covering the Niagara Falls ARS, Community Panel No. 36063C0327E
40 shows that lands adjacent to Cayuga Creek and its tributaries are within the mapped 100- and 500-year
41 floodplains. The remainder of the Installation composes an area of minimal flooding (FEMA 2008,
42 FEMA undated). **Figure 3-2** shows the locations of the floodplains on Niagara Falls ARS. This includes
43 the area to the west of the runway and through the central portion of the Installation.

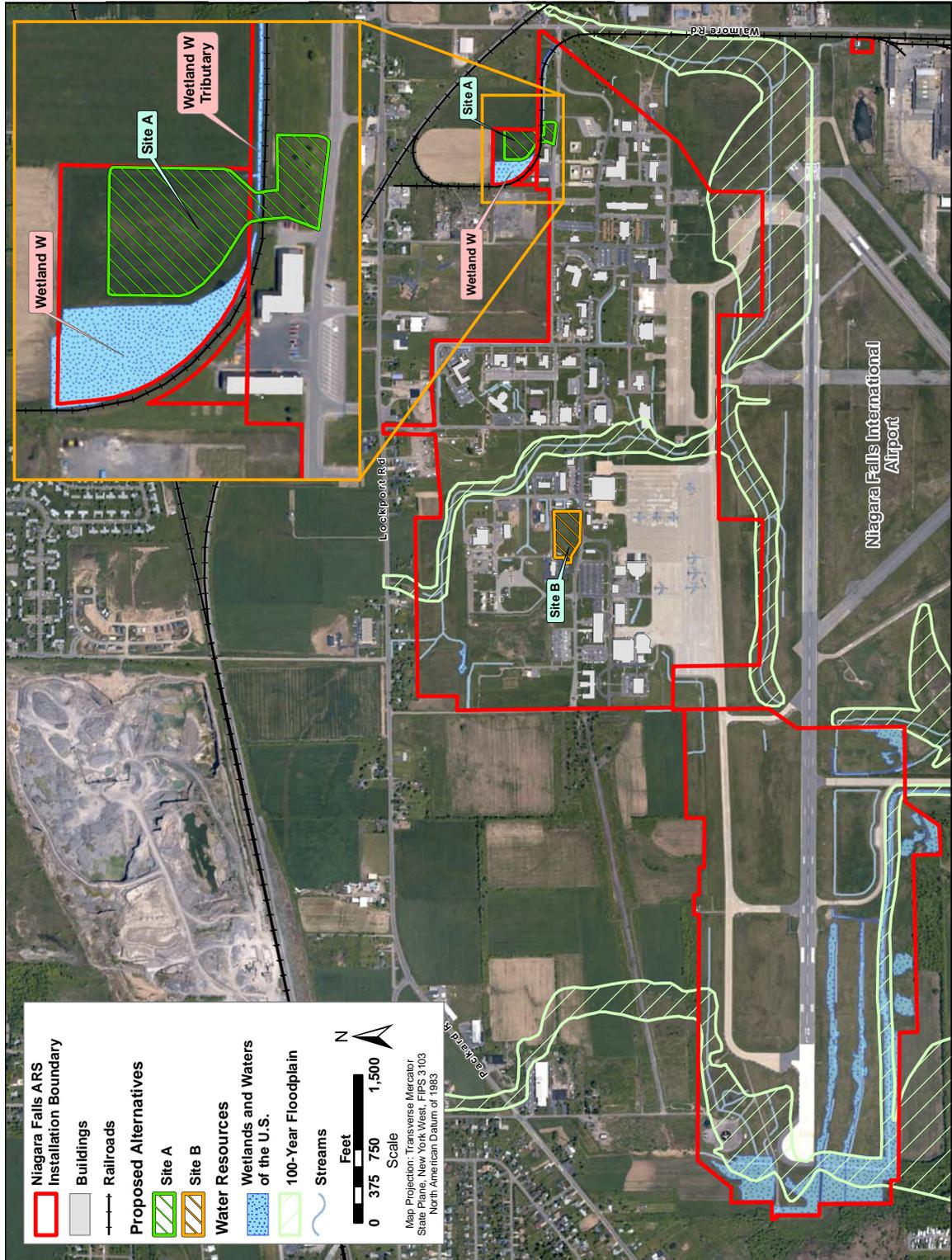


Figure 3-2. Water Resources at Niagara Falls ARS

1 3.2.4 Wildlife

2 **Reptiles and Amphibians.** The box turtle (*Terrapene carolina carolina*), common garter snake
 3 (*Thamophis sirtalis*), and northern leopard frog (*Rana pipiens*) are characteristic herpetile species found
 4 on and in the vicinity of Niagara Falls ARS. Six species of reptiles and amphibians were found between
 5 1997 and 1999 at Niagara Falls ARS, including snapping turtle (*Chelydras serpentina*), midland painted
 6 turtle (*Chrysemys picta marginata*), eastern garter snake, northern leopard frog, wood frog (*Rana*
 7 *sylvatica*), and eastern box turtle. On all sampling dates when reptiles and amphibians were observed,
 8 wood frogs and northern leopard frogs were found on the southwestern end of the property, in the wetland
 9 area, and along edges of Cayuga Creek and ditches. In addition, tadpoles from both species were found in
 10 the creek and ditches. Snapping turtles and painted turtles were commonly seen in areas throughout
 11 Cayuga Creek and the ditches. The eastern garter snake was commonly found in the grassland areas and
 12 along drainage ditches; two dead snakes were found on the runways and taxiways.

13 **Birds.** Bird populations in the region are large; 52 bird
 14 species were observed between 1997 and 1999 at Niagara
 15 Falls ARS. The most abundant native birds in the area
 16 include the red-winged black bird (*Agelaius phoeniceus*),
 17 European starling (*Sturnus vulgaris*), song sparrow
 18 (*Melospiza melodia*), gulls (*Larus* spp.), eastern
 19 meadowlark (*Sturnella magna*), savannah sparrow
 20 (*Passerculus sandwichensis*), rock dove (*Columbia livia*),
 21 mourning dove (*Zenaida asiatica*), killdeer (*Charadrius*
 22 *vociferous*), American crow (*Corvus brachyrhynchos*), and
 23 great blue heron (*Ardea herodias*). During winter months,
 24 the mallard (*Anas platyrhynchos*), American black duck (*A.*
 25 *rubripes*), Canada goose (*Branta canadensis*), and great
 26 blue heron (*Ardea herodias*) are observed on the
 27 Installation. A snowy owl was observed during the 2008
 28 INRMP Working Group Meeting at Niagara Falls ARS (see
 29 **Figure 3-3**). A comprehensive list of birds recorded at
 30 Niagara Falls ARS during point counts conducted in 2006 is
 31 included in **Appendix D**.



Figure 3-3. Snowy Owl Observed Along Niagara Falls ARS Airfield

32 **Mammals.** Common mammal species within the local ecoregion include the white-tailed deer
 33 (*Odocoileus virginianus*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), woodchuck (*Marmota*
 34 *monax*), gray squirrel, eastern chipmunk, short-tailed shrew, eastern cottontail (*Sylvilagus floridanus*), and
 35 cotton mouse. Eleven mammal species were observed between 1997 and 1999 at Niagara Falls ARS.
 36 The meadow vole (*Microtus pennsylvanicus*), coyote (*Canus lutrans*), and whitetail deer were most often
 37 observed. Meadow voles were found every day mammals were observed and are very abundant
 38 throughout the grassland areas of the airfield. Coyotes were regularly seen on the airfield, while whitetail
 39 deer were frequently sighted at the west end of the property. Other species found were beaver
 40 (*Castor canadensis*), woodchuck, muskrat (*Ondatra zibethica*), deer mouse (*Peromyscus maniculatus*),
 41 raccoon, eastern cottontail rabbit, striped skunk (*Mephitis mephitis*), and red fox (NFARS 2001b).

42 **Fish.** Fish species found in Cayuga Creek include minnows, carp, and bluegill. Fourteen fish species,
 43 from six different families, were collected during surveys. In Cayuga Creek, creek chubs and common
 44 shiners were found at most sites and during all seasons, in nearly equal numbers over the period surveyed.
 45 This indicates they are year-round residents of the creek. Also found in Cayuga Creek, in descending
 46 order of numbers collected, were bluntnose minnow (*Pimephales notatus*), johnny darter (*Etheostoma*

1 *nigrum*), brook stickleback (*Culea inconstans*), white sucker (*Catostomus commersoni*), central
 2 mudminnow (*Umbra limi*), bluegill (*Lepomis macrochirus*), common carp (*Cyprinus carpio*), rock bass
 3 (*Ambloplites rupestris*), goldfish (*Carassius auratus*), pumpkinseed (*Lepomis gibbosus*), emerald shiner
 4 (*Notropis cornutus*), and largemouth bass (*Micropterus salmoides*). The one largemouth bass found was
 5 dead in the “pond area.” Claw marks in the fish indicated it was preyed upon by a piscivorous bird.
 6 During April sampling, female johnny darters were found in spawning condition in Cayuga Creek. In the
 7 west-end ditches, brook sticklebacks were most commonly found during all seasons. Other species found
 8 included central mudminnow, common shiner (*Notropis cornutus*), bluntnose minnow, and creek chub
 9 (*Semotilus atromaculatus*). The latter three species were found on only one sampling day. Female brook
 10 sticklebacks were found in spawning condition in the ditch during May surveys (NFARS 2001b).

11 3.2.5 Wildlife and Fisheries Habitat

12 Currently, Niagara Falls ARS holds a NYSDEC Category I habitat classification (NYSDEC 2007e).
 13 NYSDEC has indicated that the Installation’s grassland habitat has regional importance for supporting a
 14 variety of grassland bird species. Specifically, the short grassland habitat adjacent to the runways and
 15 taxiways of the Station were supporting various grassland birds, including upland sandpipers (NYS
 16 threatened), northern harrier (NYS threatened), bobolink, field sparrow, and eastern meadowlark (see
 17 **Table 3-3**). After a more recent review of the USFWS bird survey reports, it was determined that these
 18 species were still observed at NFARS and several were successfully breeding there. In addition, two New
 19 York State-listed grassland species (grasshopper sparrow-NYS special concern and short-eared owl-NYS
 20 endangered) were identified as either breeding or observed at NFARS (NYSDEC 2007e).

21 **Table 3-3. Protected^a Bird Species with Confirmed Breeding Behavior**
 22 **in the Vicinity of Niagara Falls ARS, 2000-2005**

Common Name	Scientific Name	Date Observed
Barn swallow	<i>Hirundo rustica</i>	7/19/2004
Blue jay	<i>Cyanocitta cristata</i>	6/28/2003
Bobolink ^b	<i>Dolichonyx oryzivorus</i>	7/12/2004
Common yellowthroat	<i>Geothlypis trichas</i>	7/01/2003
Common grackle	<i>Quiscalus quiscula</i>	6/16/2003
Eastern meadowlark ^b	<i>Sturnella magna</i>	6/11/2003
Mourning dove	<i>Zenaida macroura</i>	6/16/2003
Northern harrier	<i>Circus cyaneus</i>	6/10/2003
Northern mockingbird	<i>Mimus polyglottos</i>	7/12/2004
Red-tailed hawk	<i>Buteo jamaicensis</i>	3/14/2003
Red-winged blackbird ^b	<i>Agelaius phoeniceus</i>	6/10/2003
Savannah sparrow ^b	<i>Passerculus sandwichensis</i>	6/04/2003
Song sparrow ^b	<i>Melospiza melodia</i>	7/19/2004
Swamp sparrow	<i>Melospiza georgiana</i>	7/03/2003
Willow flycatcher ^b	<i>Empidonax traillii</i>	7/19/2004
Yellow warbler	<i>Dendroica petechia</i>	6/29/2004

Source: NYSDEC 2007c, NFARS 2006, NFARS 2009

^a Protected species are defined in New York State ECL 11-0103 as all wild birds except those named as unprotected.

^b nests have been located on the airfield in 2003 and 2007

1

2 Wetland communities, although limited, are another habitat type on the Installation. Wetlands are the
3 preferred habitat for the majority of the freshwater wading bird populations in western New York. Most
4 of the wading bird species tend to select the habitat based on such factors as water depth, substrate type,
5 prey type, prey availability, and vegetative cover. Both of these types of bird populations are highly
6 mobile and tend to utilize certain vegetation types on a seasonal basis.

7 The fisheries habitat on Niagara Falls ARS consists of Cayuga Creek and its unnamed tributaries.
8 Intermittent flow and limited aquatic habitat attribute to the relatively low value of these waterways in
9 relation to their regional ability to support aquatic species.

10 3.2.6 Threatened and Endangered Species

11 The USFWS and the NYSDEC were contacted regarding the presence of threatened and endangered
12 species in the geographic area of Niagara Falls ARS to satisfy Section 7(c) of the Endangered Species Act
13 (ESA) (16 U.S.C. 1536) and Part 182 of the New York State Environmental Conservation Law
14 (§11-0535).

15 Under the ESA, an endangered species is one that is in imminent danger of extinction throughout all or a
16 significant portion of its range. A threatened species is one that is likely to become endangered within the
17 foreseeable future throughout all or a significant portion of its range. Species can also be listed as species
18 of special concern that are at risk of becoming threatened. Under Part 182.2 of the New York State
19 Environmental Conservation Law (Section 182.2(g) of 6NYCRR Part 182), the definitions for
20 endangered and threatened are the same as those described above, except the range is limited to New
21 York State, but for which documented concern exists for their continued welfare in New York. Some
22 species observed during this project were listed on the New York State Wildlife Grants Program listing of
23 Species of Greatest Conservation Need where they were given a Heritage S-Rank: State rank by New
24 York Natural Heritage Program. To be listed as a Species of Greatest Conservation Need, a species must
25 have an undecided status due to insufficient knowledge of species abundance, species rarity, or species
26 vulnerability to disturbances.

27 In 1997, 1998, 2001, and 2007, the USFWS-Lower Great Lakes Fish and Wildlife Conservation Office
28 (LGLFWCO), formerly the Lower Great Lakes Fishery Resources Office (LGLFRO), conducted surveys
29 for federally and state-listed endangered, threatened, and special concern species, and inventories of the
30 natural communities and habitats on Niagara Falls ARS (NFARS 1998c, NFARS 2001a, NFARS 2009d).
31 Additional surveys were also conducted by USFWS-LGLFWCO in 2001, 2006, and 2008 (NFARS
32 2009d). No federally threatened or endangered species have been observed on Niagara Falls ARS. Seven
33 New York State-listed bird species have been observed on the Installation, including the upland sandpiper
34 (*Bartramia longicauda*), short-eared owl (*Asio flammeus*), northern harrier (*Circus cyaneus*), grasshopper
35 sparrow (*Ammodramus savannarum*), American bittern (*Botaurus lentiginosus*), least bittern (*Ixobrychus*
36 *exilis*), and horned lark (*Eremophila alpestris*). Due to habitat types on the Installation and historic
37 ranges of several species, additional federally and state-listed threatened and endangered species and
38 species of concern have potential to occur on Niagara Falls ARS. The USFWS identified the Federally
39 threatened eastern prairie fringed orchid (*Platanthera leucophea*) as historically being present in Niagara
40 County. It was not found during the 1998 vegetation survey conducted in May, August and September
41 (NFARS 2001b). Based on bat surveys conducted in 2007, USFWS-LGLFWCO determined that due to

1 the lack of summer roosting habitat and the lack of major food orders, bats in general do not utilize
 2 Niagara Falls ARS. The resources that bats require to survive are not provided at the Installation,
 3 especially the specific resource requirements needed for the Indiana bat (*Myotis sodalis*) and eastern
 4 small-footed myotis (*M. leibii*) (NFARS 2009d). **Table 3-4** lists federally and state-listed threatened and
 5 endangered species which occur on or in the vicinity of the Installation.

6 **Table 3-4. Threatened and Endangered Species with the Potential to Occur**
 7 **at Niagara Falls ARS**

Common Name	Scientific Name	Status		Presence on Niagara Falls ARS
		Federal	State	
Mammals				
Allegheny woodrat	<i>Neotoma floridana</i>	NL	E	Historic range
Indiana bat	<i>Myotis sodalis</i>	E	E	Historic range
Eastern small-footed myotis	<i>Myotis leibii</i>	NL	SC	Historic range
Birds				
American bittern	<i>Botaurus lentiginosus</i>	NL	SC	Occurs
Peregrine falcon	<i>Falco peregrines</i>	NL	E	Migrates through
Bald eagle ¹	<i>Haliaeetus leucocephalus</i>	D	T	Migrates through
Common nighthawk	<i>Chordelles minor</i>	NL	SC	Migrates through
Common tern	<i>Sterna hirundo</i>	NL	T	Migrates through
Grasshopper sparrow	<i>Ammodramus savannarum</i>	NL	SC	Occurs
Henslow's sparrow	<i>Ammodramus henslowii</i>	NL	T	Historic range
Horned lark	<i>Eremophila alpestris</i>	NL	SC	Occurs
Least bittern	<i>Ixobrychus exilis</i>	NL	T	Occurs
Loggerhead shrike	<i>Lanius ludovicianus</i>	NL	E	Historic range
Northern harrier	<i>Circus cyaneus</i>	NL	T	Occurs
Osprey	<i>Pandion haliaetus</i>	NL	SC	Migrates through ³
Piping plover ²	<i>Charadrius melodus</i>	E	E	Migrates through
Red-shouldered hawk	<i>Buteo lineatus</i>	NL	SC	Migrates through
Short-eared owl	<i>Asio flammeus</i>	NL	E	Occurs
Upland sandpiper	<i>Bartramia longicauda</i>	NL	T	Occurs
Vesper sparrow	<i>Pooecetes gramineus</i>	NL	SC	Historic range
Amphibians and Reptiles				
Eastern box turtle	<i>Terrapene Carolina</i>	NL	SC	Occurs ⁴
Northern cricket frog	<i>Acris crapitans</i>	NL	E	Historic range
Queen snake	<i>Regina septemvittata</i>	NL	E	Historic range
Plants				
Eastern prairie fringed orchid	<i>Platanthera leucophea</i>	NL ⁵	SH	Historic range

Sources: NFARS 2001a and 2009d, NYSDEC 2010b, USFWS 2010a, USFWS NYFO 2010, NY Natural Heritage 2007 and 2008

Notes:

1. The bald eagle was delisted on August 8, 2007. While there are no ESA requirements after this date, the eagles continue to receive protection under the Bald Eagle Protection Act.
2. Piping plover is listed as federally endangered in the Great Lakes Region, and as federally threatened in the Atlantic Coastal Region.
3. Osprey was observed flying over the Installation.
4. Eastern box turtle observation might have been misidentification.

5. The eastern prairie fringed orchid was previously listed by the USFWS as federally threatened in New York in 2009; however, according to the 2010 species profile for the eastern prairie fringed orchid, the species is not known to occur in New York State (USFWS 2010b). The eastern prairie fringed orchid was removed from the 2010 USFWS threatened and endangered species list for New York State (USFWS 2010a), although it is still a federally listed species.

Key:

E = Endangered

SH = State Historical

D = Delisted

T = Threatened

NL = Not Listed

SC = Species of Special Concern

1 Threatened and endangered species identified during the 2007 surveys are described below.

2 **Grasshopper sparrow.** The grasshopper sparrow (*Ammodramus* *savannarum*) is state-listed as special
3 concern and was once thought to frequently nest in several areas along the Niagara and Erie county
4 borders (see **Figure 3-4**). The Niagara Falls ARS has extensive grassland fields where grasshopper
5 sparrows might nest. Grasshopper sparrows were consistently heard from late June through early August
6 on the western half of the airbase at two locations. It was assumed that at least two different grasshopper
7 sparrows were heard. The first was heard twice in a field near Cayuga Creek that was north of Runway 6
8 and east of Taxiway K. A second grasshopper sparrow was heard multiple times in a large field north of
9 Runway 28 between Taxiways A and A1 (NFARS 2009).

10



Figure 3-4. Grasshopper Sparrow

11 **Horned lark.** The horned lark (*Eremphila* *alpestris*) is state-listed as special concern (see **Figure 3-5**). A
12 few horned larks were heard early in the survey season (late May) in the grasslands at the far eastern end
13 of the airbase, north of Runway 28 and east of Taxiway A3. It was assumed that these birds were
14 migrating through the area at the time of the survey and were using the fields to forage. However, these
15 birds begin breeding in March and the young will fledge by May. It is possible that horned lark nested at
16 the Niagara Falls ARS and that nests were overlooked due to the late start of the survey (NFARS 2009).



Figure 3-5. Horned Lark

1

2 **Northern harrier.** The northern harrier (*Circus cyaneus*) is state-listed as threatened and was observed
3 regularly at Niagara Falls ARS foraging low over many of the fields (see **Figure 3-6**). Nests are difficult
4 to locate as these raptors nest on elevated ground concealed by vegetation. It is unlikely that the northern
5 harrier nested in areas that were considered semi-improved where mowing periodically occurs at the
6 Niagara Falls ARS. The northern harrier utilizes areas that are upland and wetland for nesting. Nesting
7 proximal to the airbase has been confirmed by the NYSDEC Breeding Bird Atlas (2007c). Therefore,
8 nesting might have occurred near the state wetland TW-1, due west of the Niagara Falls ARS (NFARS
9 2009).



Figure 3-6. Northern harrier

10 **Osprey.** The osprey (*Pandion haliaetus*) is state-listed as special concern (see **Figure 3-7**). A single
11 sighting was documented during the summer survey work. The osprey was observed flying over the
12 airbase with a fish in its talons. It was presumed that the bird had caught the fish in the Niagara River and
13 was returning to its nest somewhere north of the Niagara Falls ARS. Although, the osprey is not nesting
14 at the Niagara Falls ARS, it might be using the airbase as a navigation corridor to get to the Niagara River
15 (NFARS 2009).



Figure 3-7. Osprey

1

2 **Devil crayfish.** The devil crayfish (*Cambarus diogenes*) is one of several secondary burrowing crayfish
3 that are predominantly found in clay soils across their geographic range in the midwestern and
4 mid-Atlantic regions of the United States (see **Figure 3-8**). However, the extreme northeastern edge of
5 Lake Erie (Niagara Peninsula and Western New York) has isolated populations of *C. diogenes* and
6 includes the Niagara Falls ARS where soil and water table conditions are optimal. It is because of this
7 patchy distribution that this species is of greatest conservation need in New York (NYSDEC 2007a) and
8 has an S2 rank given by the New York State Natural Heritage Program (NFARS 2009).

9



Photo Courtesy of Matt Sell

Figure 3-8. Devil Crayfish

10 Other species of conservation concern that periodically occur at the Niagara Falls ARS, were not found
11 during this survey as in the past (NFARS 2001a, b; NFARS 2006). It should be noted that although the
12 following species were not observed during the 2007 surveys, they might have been present at other times
13 of the day, season, or year.

1 **American bittern.** The American bittern (*Botaurus lentiginosus*) is state-listed as special concern (see
2 **Figure 3-9**). A single sighting was documented on 27 April 1999 in Cayuga Creek. This limited sighting
3 indicates infrequent, transient use by this species (NFARS 2001b).

4



Figure 3-9. American Bittern

5 **Henslow's sparrow.** The Henslow's sparrow (*Ammodramus henslowii*), which is a New York State
6 threatened species, was not found during the 2007 survey; however, the Niagara Falls ARS is part of its
7 historic range (see **Figure 3-10**). This grassland bird species prefers neglected, overgrown fields that are
8 slightly wet; avoiding fields that have been mowed (NFARS 2001a).

9



Figure 3-10. Henslow's Sparrow

10

1 **Least bittern.** The least bittern (*Ixobrychus exilis*), which is state-listed as threatened, was not found
2 during the 2007 survey (see **Figure 3-11**). Past survey work (May through August 2005) has indicated
3 that least bitterns occur at the NFARS (NFARS 2006). The least bittern nests exclusively in wetland
4 habitats.



Photo Courtesy of Travis Mahan

Figure 3-11. Least bittern

5 **Short-eared owl.** The short-eared owl (*Asio flammeus*) is state-listed as endangered (see **Figure 3-12**).
6 Six short-eared owls were observed on 12 March 1998. These were the only sightings of this species
7 during this survey effort; however, additional winter sightings have occurred on the Niagara Falls ARS
8 and land adjacent to the Niagara Falls ARS. It is suggestive the short-eared owl utilizes the Niagara Falls
9 ARS, as well as adjacent lands, for over-wintering or migratory stopover habitat (NFARS 2001b).

10



Photo Courtesy of S.J. Lang, VIREO

Figure 3-12. Short-eared owl

11

1 **Upland sandpiper.** The upland sandpiper (*Bartramia longicauda*) is state-listed as threatened (see
2 **Figure 3-13**). An upland sandpiper was thought to be observed on 28 April 1998. Although this species
3 could not be confirmed during this survey effort, several sightings of this species occurred in 2000 while
4 conducting other survey work. Upland sandpipers were observed 23 May, 20 June in survey plot 9,
5 27 June, and 20 and 25 July. On the 20 June 2000 occurrence, two adults were displaying territorial
6 behavior while one fledgling (unable to fly) continued to run away from the observers. No nest was
7 found; however, repeated sightings during the breeding season suggest breeding activity on the Niagara
8 Falls ARS (NFARS 2001b).

9



10

11

Figure 3-13. Upland Sandpiper

12

13 **Indiana bat and small-footed bat.** The Indiana bat (*Myotis sodalis*) and the small-footed bat (*Myotis*
14 *leibii*) are two of nine bat species found in New York State (see **Figure 3-14** and **Figure 3-15**). Both are
15 ranked as species of conservation need. The Indiana bat is state- and federally listed as endangered while
16 the small-footed bat is a state species of special concern. Eastern New York (Albany, Essex, Warren,
17 Jefferson, Onondaga, and Ulster counties) is primarily where Priority II and III Indiana bat hibernacula
18 (caves) have been documented (NYSDEC 2007d). Currently, no sightings of these species have been
19 recorded in western New York, although their geographic range indicates the possible presence of this
20 species in the area of Niagara Falls ARS. Both bat species are cave and mine dwellers, but will also use
21 man-made structures as hibernacula and will roost in tree cavities, rock ledges, and under bark during the
22 summer. Trapping for bats is usually conducted at cave or mine entrances where there is a potential for
23 the presence of the species of interest (USFWS 2007). The Niagara Falls ARS lacks natural hibernacula
24 and trees of large size (diameter at breast height [dbh] = 10 centimeters) used for roosting. Therefore,
25 trapping was conducted over water due to the possibility of capturing bats while foraging. No bats were
26 caught or observed during the 2007 T&E survey (NFARS 2009).



Photo Courtesy of Midwest Image Library

Figure 3-14. Indiana Bat



Photo Courtesy of Merlin Tuttle

Figure 3-15. Small-footed bat

1 **Queen snake.** The queen snake (*Regina septemvittata*) is one of a few species of highly aquatic snakes
2 found in New York State (see **Figure 3-16**). These snakes inhabit rocky riparian edges of streams
3 vegetated with trees and shrubs from which they can hang from to bask. They also use the waters of
4 shallow streams and rivers foraging primarily for newly molted crayfish that dwell under rocks and logs.
5 Although quite common in some parts of their geographical range throughout the eastern United States,
6 queen snakes are imperiled and listed as endangered in New York. This species has never been observed
7 at Niagara Falls ARS. Only a few local, isolated populations exist in the western portion of the state
8 (NYSDEC 2007b) which could include the Niagara Falls ARS, as crayfish are abundant in Cayuga Creek.
9 No queen snakes were caught or observed during the 2007 T&E survey (NFARS 2009).



Figure 3-16. Queen Snake

1 **3.3 Mission Impacts on the Local Environment**

2 Through the accomplishment of the Installation’s mission, Niagara Falls ARS poses a variety of current
3 and future potential impacts on its local environment. This section identifies and describes the nature of
4 these impacts.

5 **3.3.1 Current Major Impacts**

6 Current major impacts on the local environment are discussed in the following sections. Included in the
7 discussion are hazardous materials and waste, water quality, BASH, noise, air pollution, and pest
8 management.

9 **3.3.1.1 Hazardous Materials and Waste**

10 The operation of aircraft, vehicles, and equipment requires the use of various hazardous materials
11 including fuels, solvents, lubricants, and caustics. If released to the environment, these materials have the
12 potential to adversely impact air, soil, and water quality. The activity at the Installation that poses the
13 greatest potential threat to the local environment is the transfer and storage of petroleum, oils, and
14 lubricants (POL). Fortunately, the Installation has several environmental programs (e.g., spill control,
15 hazardous waste management, and storm water pollution prevention) that have been successful in
16 controlling hazardous materials and waste releases to the environment.

17 POL transfer and storage operations take place throughout the Installation. Accidental jet petroleum-8
18 (JP-8) spills and leaks occurring at the POL Complex are protected from entering the storm sewer system
19 by concrete secondary containment dikes and trenches that discharge into the sanitary sewer via an
20 oil/water separator. However, accidental POL spills that occur in other parts of the Installation that are
21 not protected by secondary containment could flow directly or indirectly to Cayuga Creek based on the
22 spill location.

23 The Installation spill plan (i.e., hazardous materials [HAZMAT] Plan) describes preventative actions that
24 are designed to lower the potential for HAZMAT spills and prevent them from entering the environment.
25 The HAZMAT Plan also presents required notification procedures and detailed responses to releases that
26 could occur.

27 In addition, Niagara Falls ARS has implemented a pharmacy system for distributing HAZMAT. The
28 pharmacy system aims to minimize and organize the usage of HAZMAT, thus reducing hazardous waste
29 generation. The system works to assess the use of all HAZMAT to determine if less-toxic alternatives
30 could be utilized during the industrial process. On an as-needed basis, the pharmacy allocates materials
31 for use at the Installation’s industrial shops. To make the materials available for other users, any unused
32 portion is returned to the pharmacy.

33 The Hazardous Waste Management Plan outlines procedures for the proper accumulation, collection,
34 transportation, and disposal of hazardous wastes. It is designed to ensure that hazardous wastes are
35 disposed of in a legal and timely manner. The Installation is a large quantity generator that generates
36 more than 1,000 kilograms of hazardous waste per month.

37 The permitted storage of hazardous waste occurs in Building 830, which is fully secured and contained.
38 The Installation arranges for a contractor to transport the waste to a permitted treatment, storage, and
39 disposal (TSD) facility for ultimate disposal. Additionally, the Installation has designated 22 locations as
40 hazardous waste satellite accumulation points. Each satellite accumulation point stores hazardous waste

1 in 55-gallon drums or other containers, utilizing only one container per waste stream. Full containers are
2 transferred to the TSD facility and stored until the contractor removes and transports the waste for
3 ultimate disposal. The majority of the waste generated on the Installation is the result of C-130 aircraft
4 maintenance and degreasing operations. Other hazardous wastes generated on the Installation include
5 waste paint, solvent-contaminated rags, dye penetrants, flammable solvents, contaminated fuels,
6 lubricants, stripping chemicals, waste paint, and related materials. The generating organization, the
7 914 AW Environmental Flight (CEV) and the 107 AW Environmental Management Office, assumes
8 responsibility for managing the hazardous waste (NFARS 1996b).

9 Sixty percent of the waste generated at Niagara Falls ARS is from aircraft maintenance, 15 percent from
10 motor vehicle maintenance, another 15 percent from facility maintenance, and the remaining 10 percent
11 from POL operations. These four sources of waste at Niagara Falls ARS have specific waste streams
12 associated with them.

13 Maintenance shops are responsible for conducting repairs, inspections, and regular maintenance on the
14 C-130 aircraft. These shops include corrosion control, wheel and tire, battery, non-destructive inspection
15 (NDI), engine, fuel cell, and phase dock. Typical hazardous materials/waste that are stored and generated
16 at these shops include aerosol lubes and paints, POLs, solvents, hydrazine, purging fluid, and degreasers.

17 Most vehicle maintenance occurs at the motor pool and aerospace ground equipment (AGE) shops
18 (GSA vehicles are maintained off the Installation). These shops are responsible for the regular
19 maintenance of government-owned motor vehicles and AGE equipment, respectively. These shops use
20 and store a variety of oils, antifreezes, and transmission fluids. Waste oil products are stored at the shops
21 and are recovered by a waste oil recycler. Painting and degreasing operations are also performed on the
22 vehicles and equipment, which results in the generation of waste paint/thinner, waste paint filters, and
23 bead blast media, which are treated as hazardous waste.

24 Civil Engineering (CE) is responsible for the upkeep of the Installation's facilities, roads, and fuel system.
25 Through a Base Operations Services (BOS) contract, activities performed include welding, electrical,
26 paint, liquid fuels, plumbing, air conditioning, and refrigeration maintenance. Typical wastes generated
27 by the BOS contractor include paints, pesticides, degreasing solvent, fuel spill residues, and POLs.

28 POL operations include the receiving, storing, and dispensing of JP-8 fuel. Currently, the 107 AW POL
29 is out of commission and is tentatively slated for demolition; the 914 POL is the only operational fuels
30 system. Wastes generated by POL operations include fuel-contaminated water and fuel-contaminated
31 absorbent.

32 3.3.1.2 Environmental Restoration Program

33 Niagara Falls ARS is conducting environmental restoration efforts under the USAF Environmental
34 Restoration Program (ERP). The ERP was established by DoD to ensure that military Installations
35 identify and evaluate suspected problems associated with past waste disposal actions (see **Table 3-5**).
36 Although Niagara Falls ARS is not on the Comprehensive Environmental Response, Compensation, and
37 Liability Act (CERCLA) National Priorities List (NPL), ERP sites can adversely impact the local natural
38 environment if contaminants are able to migrate into surface waters. Locations of the ERP sites at
39 Niagara Falls ARS are identified in **Figure 3-17**.

40

1

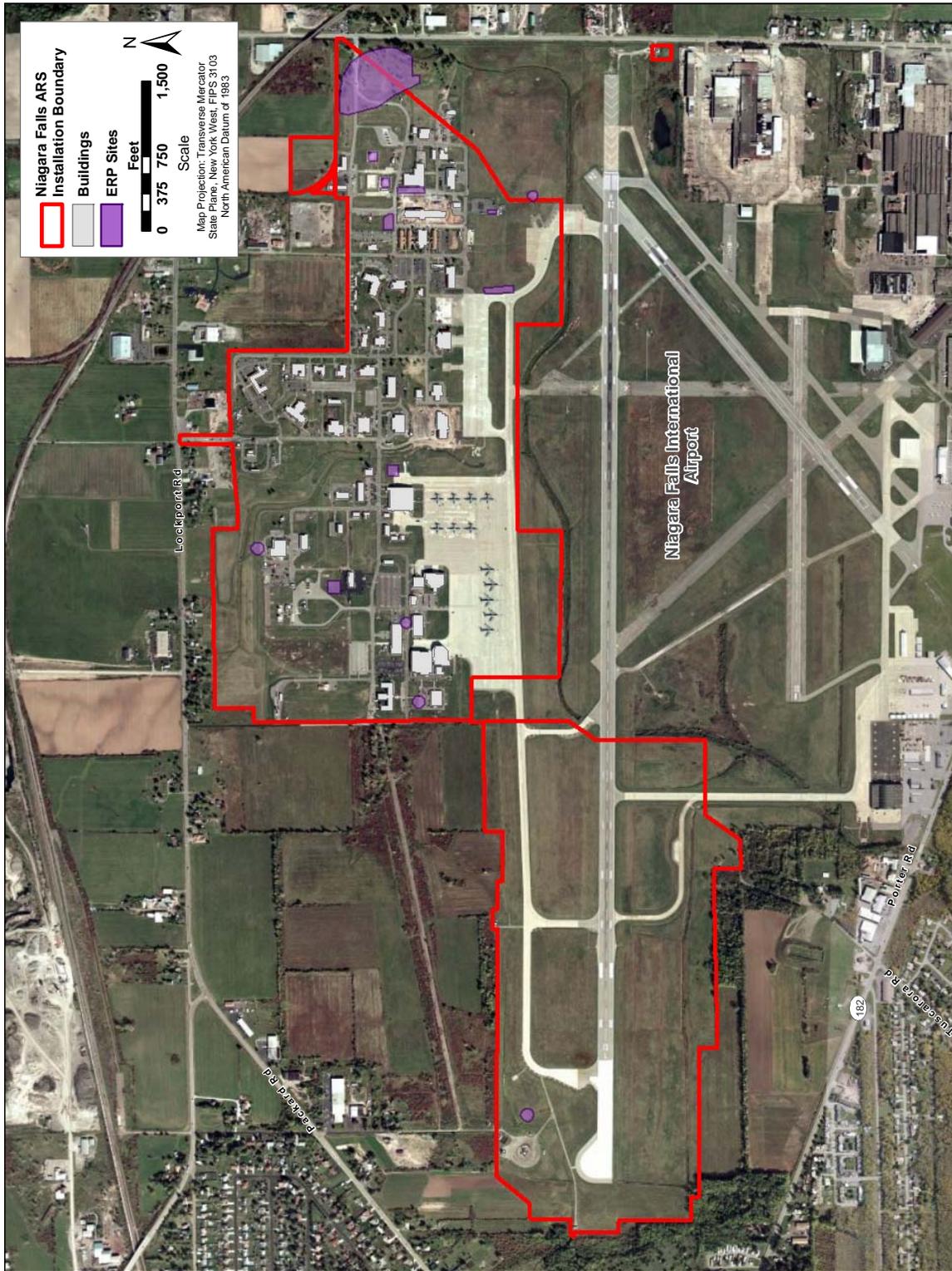
Table 3-5. Summary of ERP Sites at Niagara Falls ARS

ERP Site	Name	Contaminant	Status
1*	Building 600 JP-4 Pipeline Leak	JP-4	LTM of GW
2*	POL Bulk JP-4 Tank C Leak	JP-4	LTM of GW
3	Landfill	Construction rubble, coal ash, waste oil, shop wastes, batteries, electrical and car parts, and drums	CM being implemented
4	Base Exchange Gas Station Motor Gasoline Tank Leak	Gasoline	LTM of GW
5	NYANG Hazardous Waste (Hazwaste) Drum Storage Yard	Drummed hazardous waste including solvents, paints, and oils	LTM of GW
6	POL Bulk JP-4 Tank A Leak	JP-4	NFA
7	JP-4 Tank Truck Spill	JP-4	LTM of GW
8	Building 202 Drum Storage Yard	Drummed hazwaste including solvents, paints, and oils	LTM of GW
9	Fire Training Area No. 3	Waste fuels, oils, solvents, and hydraulic fluid	LTM of GW
10	Fire Training Area No. 1	Waste fuels, oils, solvents, and hydraulic fluid	CM being implemented
11	Fire Training Area No. 2	Waste JP-4	NFA
12	Building 850 Drum Storage Yard	Drummed hazwaste including solvents, paints, and battery acid oils	NFA
13	Underground Tank Pit	General ship waste including waste oils, solvents, and automotive fluids	CM being implemented
14	AFRC Hazwaste Drum Storage Yard	Drummed hazwaste including solvents, paints, and battery acid oils	NFA - Site Closed

Source: NFARS 1996b

Note: *Former ERP Site

Key: CM = Corrective Measures, LTM = Long-Term Monitoring, GW = Groundwater, NFA = No Further Action



Sources of Aerial Photography: ESRI Resource Center, 2007. Installation Boundary, Buildings, and Water Features: Niagara Falls ARS, 2008

Figure 3-17. Environmental Restoration Program Sites at Niagara Falls ARS

1 An Installation-wide groundwater investigation was conducted in 2007 under the DoD ERP and in
2 compliance with the requirements of a NYSDEC Part 373 hazardous waste storage permit
3 (Permit Number 9-2999-00005/00008 issued July 13, 2005), which requires corrective action programs
4 for all solid waste management units (SWMUs). This project included field investigations at six ERP
5 sites (Sites 3, 5, 7, 8, 10, and 13) and two former sites for which no further response action is planned
6 (former IRP Sites 1 and 2). The investigations included sampling of groundwater and surface water for
7 long-term monitoring, water level measurements, and other related tasks. Interim Corrective Measure
8 (ICM) implementation included long-term groundwater monitoring at Sites 5, 7, and 8. Performance
9 monitoring of remedial systems at Sites 3, 10, and 13 was also conducted monthly throughout the second
10 half of 2007. Data obtained from previous studies and acquired from this project were assessed to
11 develop an understanding of past and present site conditions.

12 Recommendations for each of the following sites are based on requirements of the NYSDEC Part 373
13 Corrective Action Permit, historical analytical results, RODs, current and recent past corrective actions,
14 and present contaminant trends. Further recommendations could include removal of more wells from the
15 ERP sampling program at sites that warrant such action.

16 The objectives of continued monitoring are as follows:

- 17 • To determine if natural and enhanced contaminant degradation continues or if additional
18 mobilization of contaminants from source areas does not occur at sites in long-term monitoring
19 (Sites 5, 7, and 8)
- 20 • To monitor for potential horizontal or vertical migration of groundwater contaminants, and
21 monitor system performance at sites where corrective measures are underway (Sites 3, 10,
22 and 13).

23 3.3.1.3 Water Quality

24 Surface water quality at Niagara Falls ARS can be detrimentally impacted by fuel or other hazardous
25 material spills or leaks, air pollution sources, seepage from ERP sites, deicing chemicals, and sediments
26 from soil erosion. These pollutants degrade water quality either through toxic effects on organisms in the
27 water or through ancillary effects, such as high biological oxygen demand (BOD) from increased
28 microbial activity in the water or eutrophication due to excess nutrients loads (e.g., phosphorus or
29 nitrogen). High BOD can result in fish kills, and other damage to surface water ecology.

30 Sedimentation due to erosion can also impact water quality. The Installation often has several land
31 development projects occurring at any one time. These projects can require significant surface areas to
32 remain exposed for extended periods of time, thus allowing excessive erosion to occur. All construction
33 projects must take into account the possible ecological effects of erosion. Erosion disturbs existing land
34 plant systems, and the resulting siltation in streams can degrade benthic habitat and fish spawning
35 grounds. The Installation has an Erosion and Sedimentation Control Manual, February 1998, to control
36 erosion and sedimentation and to ensure compliance with the base storm water permit. In an effort to
37 protect surface water quality, the Installation uses certain soil erosion/construction best management
38 practices (BMPs).

39 During the winter, aircraft deicing/anti-icing occurs on the designated aircraft deicing pits. The aprons,
40 taxiways, and runways at the Installation are currently deiced/anti-iced with potassium acetate throughout
41 the winter. These chemicals have replaced the use of urea on the Installation in an effort to reduce
42 impacts on the environment from polluted runoff. The deicing pads are dedicated to the sanitary sewer
43 system during deicing season to eliminate the chances of deicing material traveling to the storm water.

1 The pads slope to drop inlets on the apron that are equipped with a diverter valve that directs flow either
2 into the sanitary sewer (during deicing) or into the storm sewer.

3 Installation wastewater is sent to the sanitary sewer system for treatment prior to discharge into the
4 environment, thereby preventing hazardous materials and wastes from reaching storm water and
5 contaminating the water and soil on and immediately around the Installation. Niagara Falls ARS has
6 successfully reduced the chances for such contamination through the implementation of the installation's
7 Storm Water Pollution Prevention Plan (SWPPP) and HAZMAT Plan.

8 Seven outfalls collect storm water from impervious surfaces. These outfalls are monitored on a quarterly
9 basis by Niagara Falls ARS for water quality and quantity. NYSDEC issued a baseline General State
10 Pollutant Discharge Elimination System (SPDES) Permit for Storm Water Discharges Associated with
11 Industrial Activity in June 1993. The General Permit has since been renewed and revised so it more
12 closely reflects the USEPA's Multi-Sector General Permit for Stormwater Discharges Associated with
13 Industrial Activity. This revised General Permit (GP-0-06-002) became effective on 27 March 2007 and
14 will expire 27 March 2012. The General Permit requires quarterly visual inspections of storm water,
15 annual dry weather flow inspections at storm water outfalls, and submittal of an annual certification report
16 form. NYSDEC also issued a General Permit for Storm Water Discharges Associated with Construction
17 Activities (Permit No. NYR10E212, issued in April 2002). An active SWPPP is currently in place to
18 minimize the effects of storm water discharge into surface waters (NFARS 2008).

19 In 2004, the water quality of Cayuga Creek was assessed through analysis of the benthic
20 macroinvertebrate community upstream and downstream of Niagara Falls ARS outfalls (NFARS 2005c).
21 The results of this analysis found water quality moderately to severely impacted at all locations. Organic
22 pollution impacted the upstream macroinvertebrate community whereas downstream the community was
23 affected by organic pollution and toxic conditions from municipal/industrial discharges. This biological
24 assessment was unable to identify specific contaminants or their exact source.

25 In 2005 a contaminant track-down study, which included PISCES and young-of-year (y-o-y) fish, was
26 conducted in Cayuga Creek to locate a source of contaminants identified in y-o-y fish collected in 1997.
27 The source was suspected to be upstream on Niagara Falls ARS property. A composite of y-o-y fish from
28 Bergholtz Creek, a nearby Cayuga Creek tributary, was also collected in 2005. Except for the absence of
29 mirex, Bergholtz Creek fish contained the same main four contaminants found in Cayuga Creek fish, plus
30 DDT.

31 It is important to maintain surface water quality at the Installation to protect and preserve surface water
32 resources downstream of the Installation. Downstream surface waters include Cayuga Creek and the
33 Niagara River. The Niagara River supports diverse aquatic populations that might be detrimentally
34 affected by contaminated surface water. Therefore, the success of the Installation's environmental
35 program is critical to the protection of these aquatic resources.

36 3.3.1.4 Grounds Maintenance

37 The Abbreviated Grounds Maintenance/Land Management Plan (1998) was developed in accordance
38 with AFPD 86-10, *Landscape Planning and Design*, and AFI 32-1053, *Pest Management Program*
39 (NFARS 2007b). This Plan provided Niagara Falls ARS with specific management practices that were
40 designed to maintain all lands under USAF jurisdiction while providing for landscaping that is traditional
41 in nature, simple and informal in design, compatible with surroundings, and complementary to the natural
42 setting of the area.

43 The 1998 INRMP identified and prioritized several natural resource management issues associated with

1 grounds maintenance and land management, including “lack of an overall landscape design program,”
 2 “mowing is inconsistent with BASH,” and “overgrown trees are presenting safety and aesthetic concerns”
 3 (NFARS 1998). In 2000, the NFARS entered into an agreement with the U.S. Fish and Wildlife Service,
 4 LGLFWCO (formerly LGLFRO) under the authority of the Fish and Wildlife Coordination Act (487 stat.
 5 401 as amended, 16 USC 661 et seq.) and the Conservation Programs on Military Reservations (“Sike’s
 6 Act”, 16 USC 670 et seq.). The purpose of this agreement was for the LGLFWCO to develop a
 7 Landscape Management Plan for the improved and semi-improved areas at the NFARS.

8 The Landscape Management Plan (2002) was developed to provide a practical working tool for future
 9 planning and management. All management strategies maximize efforts to account for indigenous fish
 10 and wildlife species without impeding on the mission of the NFARS or its Bird Aircraft Strike Hazard
 11 (BASH) plan. In addition, it was the goal of this plan to recommend specific management practices to
 12 enhance the landscape aesthetics without negatively affecting the military mission, benefit wildlife, and
 13 reduce BASH threats on the base.

14 Maintenance activities include mowing, mulching, pruning, and fertilizer and chemical applications on
 15 approximately 400 acres (see **Table 3-6**). There are no fertilizer applications, and pesticides are only
 16 applied on an as-needed basis. Grass is cut on an as-needed basis on the airfield to maintain the height
 17 between 7” and 14” as recommended by BASH Plan and AFI 91-202 (NFARS 2002).

18 Due to the mission of the NFARS and their existing regulatory mandates, landscape management on the
 19 semi-improved areas (airfield) cannot be drastically revised. However, management practices can be
 20 modified or altered in certain areas or at particular times to improve the mission of the base, reduce
 21 BASH threats, and enhance wildlife benefits without negatively affecting the military mission. The
 22 USFWS recommends the following:

- 23 • Maintain grass height above 10” to reduce the likelihood of flocking birds, minimize bird
 24 diversity, and enhance grassland bird habitat.
- 25 • In exposed soil areas (i.e. construction projects), plant native warm season grasses, such as, big
 26 bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), switchgrass
 27 (*Panicum virgatum*), and Indiangrass (*Sorghastrum nutans*).
- 28 • Cut treetops along Cayuga Creek at level of airfield to reduce edge habitat, minimizing BASH
 29 threats, and enhance grassland bird habitat, while maintaining riparian vegetation.
- 30 • Maintain open ditches regularly to minimize habitat for flocking birds (BASH threat).
- 31 • Implement management recommendations for the control of noxious and invasive plant species to
 32 maintain a quality grassland habitat.

33 According to the habitat classification, NYSDEC recognized the importance of the grassland habitat
 34 within the southwest area to several New York State special concern species, and has requested that the
 35 Installation adopt the following mowing guidelines (NYSDEC 1996, see Appendix H):

- 36 • Grasses should be maintained at a height of 20-30 centimeters (8 to 12 inches) over those areas
 37 which are not directly adjacent to runways or taxiways.
- 38 • These areas should not be mowed during the nesting and brood rearing season from May 1
 39 through July 31.
- 40 • Grounds maintenance personnel should watch for adults, and mark and avoid nests when mowing

1 areas directly adjacent to runways and taxiways which require mowing during the May 1 through
 2 July 31 period.

3 However, in a letter to the 914 Safety Office, the USDA-Wildlife Services determined that "leaving
 4 potential nesting areas unmowed during nesting periods to encourage the presence of the upland
 5 sandpiper on the airport contributes to an unacceptable risk to the mission of NFARS by creating
 6 potential wildlife-strike hazards." USDA-Wildlife Services is the agency assisting the BASH program and
 7 the 914 AW/SE to control wildlife hazards on NFARS.

8 NYSDEC recommended the NFARS request authorization for non-lethal take of endangered species in its
 9 Airport Depredation Permit. This authorization would cover activities such as disturbance to threatened
 10 and endangered species through the use of shellcrackers, shooting of non-listed species such as deer or
 11 birds that may present a threat to aviation safety, and habitat management activities that alter the habitat
 12 to make it unsuitable for use by listed species. If there is any activity that would result in the direct take
 13 of listed species by some means other than the operation of aircraft, an incidental take permit may be
 14 warranted. Appropriate mitigation would be based on the type of take that is anticipated to occur. If
 15 grassland birds were the concern, management or maintenance of grassland habitats outside of the area of
 16 concern for air safety would be most appropriate.

17 Airfield mowing is required by and conducted according to USAF safety directives. Airfield mowing is
 18 essential to safe flying, which is essential to the USAF mission. The USAF has determined that airfield
 19 mowing is a military readiness activity under Section 315 of the FY03 National Defense Authorization
 20 Act, P.L. 107-772. This section exempts military readiness activities from the "incidental take" provisions
 21 of the Migratory Bird Treaty Act, (16 USC 701, et seq.). Incidental take includes unintended harm to
 22 birds and their eggs.

23 **Table 3-6. Service Contractor Grounds Maintenance Activities Summary**

Activity	Time of Year	Schedule	Comments
Coordination with the 914 MSG/CEV	year-round	every 2 weeks	Participate in meeting to discuss activities performed, activities planned, and problems encountered
Turf Maintenance			
- Mowing	mid-April through mid-October	as needed, but no more than once per week	Mowing height range is 2.5 to 5 inches
- Trimming	mid-April through mid-October	once after every other mowing cycle	None
- Edging	mid-April through mid-October	monthly	None

- Weed Control	mid-April through mid-October	as needed	No herbicide application near water, within 24 hours of a rain event, or on northern perimeter fence adjacent to agricultural fields, or within any distance of this fence if the spray pattern, whether direct or airborne, passes more than 6 inches beyond the fence
- Basin Maintenance	May and October	twice per year	Woody vegetation removal only
Urban Tree Maintenance	year-round	annually or as needed	Trim dead branches and remove dead trees when encountered after coordination with 914 MSG/CEV
Storm Water Conveyance System Maintenance	year-round	monthly	Remove debris from system when encountered
Snow Removal	mid- November through mid-April	as needed	Mechanical removal of snow on sidewalks and roadways, application of sand, and ensure fire hydrant accessibility
Broad Leaf Weed Control			
- Fenceline (perimeter and security fences)	April and July	spring and summer	Roundup Pro™ or Kleenup Pro™, Triamine®, AM-40, Barricade, and water
- Railroad Tracks, Overrun Area at the end of Runway 28 Right, and Taxiways	April and July	spring and summer	Roundup Pro™ or Kleenup Pro™, Triamine®, AM-40, Barricade, and water
- Improved Area	Spring application only	every two years	Triamine®, Dimension Ultra, fertilizer, and water

Source: NFARS 1998, NFARS (undated), NFARS 2002

1

2 3.3.1.5 Bird Aircraft Strike Hazard (BASH)

3 Observations and discussions with Installation personnel identified a number of important wildlife species
4 at the Installation including raptors, gulls, Canada geese, large flocks of migrating cowbirds and starlings,
5 deer, coyotes, fox, great blue herons, occasionally great egrets, and ducks, especially mallards . The
6 presence of these species raises questions about the compatibility of wildlife at Niagara Falls ARS with
7 the Installation's mission, specifically regarding the BASH and aircraft strikes with deer. Therefore, any
8 future habitat enhancement opportunity needs to be evaluated carefully to determine its effect on the
9 flying mission.

10 Bird aircraft strikes have occurred and have been reported at the Installation. The 914 AW and 107 AW
11 maintain bird strike reports which include the date and time of each strike, conditions, aircraft model,
12 number of birds, bird species, and altitude and location at the time of the strike. To reduce strikes on and
13 near the airport, the 914 AW has established a Bird Strike Hazard Group, as required by the 914 AW

1 BASH Plan. The BASH Plan defines responsibilities and prescribes procedures to most effectively
2 reduce the chance of a bird/wildlife aircraft strike at the NFIA and in the local flying area. The Plan
3 includes maintenance specifications for grass mowing on the airfield between 17.8 – 35.6 centimeters
4 (cm) (7 to 14 inches); seasonal inspection requirements for grain-type grasses that attract high-threat
5 avian species; and periodic inspection requirements for ponding and proper drainage on the airfield
6 whenever possible to reduce insect breeding, a major food source for birds during much of the year. The
7 BASH Plan also established an educational program to acquaint crew members with the hazards
8 associated with birds.

9 BASH reduction techniques currently employed by the Installation include abating nuisance avian species
10 through the maintenance of the airfield vegetation to deter these species. Should these abatement
11 activities fail to prevent species from foraging or roosting on the airfield, the Installation employs several
12 harassment techniques, such as pyrotechnics. In the event that these abatement and harassment
13 techniques fail, the 914 AW maintains a USFWS Depredation Permit and a NYSDEC Airport Air Strike
14 Hazard Permit, as required by Section 11-0521 of the New York State Environmental Conservation Law,
15 to harass and take nonendangered and nonthreatened nuisance wildlife species. **Appendix E** presents
16 guidance on the proper methods to collect and ship bird remains for identification.

17 Cayuga Creek, its unnamed tributaries, artificial drainage waterways, and the pond on the west end of the
18 airfield provide feeding, resting, and nesting habitat for waterfowl and wading birds. The vegetation in
19 Cayuga Creek provides ducks and wading birds with food and shelter. This vegetation includes sedge,
20 grass, smartweed, and pink knotweed, which produce seeds that are attractive to waterfowl species
21 including mallards, American black ducks, and green-winged teal.

22 Vegetation such as cattails, purple loosestrife, and reed grass provides cover for minnows and other small
23 fish, which are prey species for wading birds like great blue herons.

24 Cattails in the pond south of Runway 28R and west of taxiway D provide nesting habitat for resident
25 Canada geese. The moving water of Cayuga Creek keeps the water from freezing and attracts waterfowl
26 during cold temperatures.

27 Current grasses on Niagara Falls ARS, particularly areas not mowed regularly, support populations of
28 small mammals and songbirds, which are prey species for large mammalian predators like coyotes and
29 red fox as well as raptors (red-tailed hawks and northern harriers).

30 According to the FAA Wildlife Strike Database, 134 strikes involving military aircraft occurred at the
31 NFIA from 2002-2012 (FAA 2012). All but two of these strikes resulted in no damage or damage less
32 than \$50,000. Species were identified in 95 these strikes. Two strikes resulted in class C damage
33 (\$50,000-less than \$500,000), one in 2004 involving a rock pigeon (*Columba livia*) and one in 2010
34 involving a ring-billed gull (*Larus delawarensis*).

35 More than one-half of all USAF bird-aircraft strikes occur at or below 600 feet above ground level (AGL)
36 during low-level flights. Many low-level strikes occur on low-level routes associated with airdrops and
37 bombing runs. During these flights, aircrews are involved in specific duties that leave little time to
38 monitor bird activity (AFSC 2008).

39 The USAF BASH Team maintains historic records of bird aircraft strikes. USAF Strikes by Month and
40 associated costs are presented in **Table 3-8**.

**Table 3-8. USAF Wildlife Strikes by Month
1985 - 2010**

Month	Count	Cost
January	2123	\$27,047,100
February	2176	\$20,440,838
March	3953	\$20,605,509
April	6692	\$33,958,677
May	8132	\$114,471,321
June	5318	\$60,447,212
July	6916	\$46,622,374
August	8918	\$24,842,799
September	9955	\$123,067,353
October	10531	\$41,277,435
November	4975	\$24,984,864
December	2230	\$28,332,660
TOTAL	71919	\$566,098,142

Source: AFSC 2011

3.3.1.6 Pest Management

Pesticides, herbicides, and fungicides are used throughout the Installation to control indigenous pest populations. Most of these chemicals are inherently toxic to most biological systems and, as such, often have no natural degradation pathways and can persist for lengthy amounts of time in the environment. The presence of such compounds can degrade the quality of soil, surface water, and groundwater, and should be used sparingly.

The Installation's Pest Management Plan (914 AW 2007) contains policies, standards, and requirements for the CE service contractor in performing all operations in connection with the Insect and Rodent Control Program at Niagara Falls ARS. Control measures for rats, ticks, mites, spiders, bees, wasps, fleas, gnats, ants, mice, lice, cockroaches, bedbugs, houseflies, and miscellaneous insects and rodents which could be detrimental to the health and welfare of Installation personnel and property are detailed in the Plan. The Plan requires that only USAF-approved insecticides and rodenticides be used, and provides a list of approved pesticides and procedures for their appropriate application. AFI 32-1053, *Pest Management Program*, is a policy to conduct effective pest management programs, and establishes responsibilities and procedures for pest management at USAF Installations.

Pest management programs at Niagara Falls ARS have the potential to impact natural resources. Wetlands, birds, mammals, amphibians, reptiles, and insects can be negatively affected by pesticide use. Pesticides that are sprayed to kill insects can accumulate in the tissues of higher mammals that eat the insects and fish. This process is called bioaccumulation and can eventually lead to the death of the bioaccumulator. For this reason, nonchemical means of control for insects should be used if possible. The guidelines for pest management operations are provided as follows:

- Use mechanical or biological control methods whenever feasible and economical. Only apply pesticides when no biological or mechanical control method can be found, or such controls are

1 prohibitively expensive.

- 2 • By law, all pesticides must be applied according to label specifications. Never exceed the
3 manufacturer's recommended dosage for pesticides, apply only to the target pests identified on
4 the label, wear required safety clothing, and apply the lowest labeled pesticide rate that
5 adequately controls pests. Lower rates reduce the total amount of chemical in the environment.
6 Rotate pesticides among chemical families to minimize pest resistance. Integrated Pest
7 Management (IPM) does not rely on continuous use of a single pesticide or pesticide family.
- 8 • Apply all chemicals according to manufacturer's instructions and away from drainages.
- 9 • Only certified pesticide applicators are authorized to purchase and spray pesticides. All
10 applicators must become certified and should remain current in new developments in pest
11 management.
- 12 • Use rapidly degrading pesticides, which are less likely to contaminate soil and groundwater.
- 13 • Avoid spraying pesticides within riparian zones.
- 14 • Pesticides should be applied at a time when they will be most effective against the pest. Pest
15 cycles are influenced by temperature and moisture conditions. In many cases, pests under
16 dormant or stressed conditions might not be susceptible to pesticide treatments. Avoid pesticide
17 applications during adverse weather, especially windy, wet conditions. Do not apply volatile
18 chemicals under high-temperature conditions.
- 19 • Keeping accurate records of all agricultural chemicals applied on the site will help Niagara Falls
20 ARS make informed management decisions. By law, records of all restricted use pesticides must
21 be maintained by operators for at least 2 years. Records of nonrestricted chemicals can be
22 maintained on the same form as the required records with minimal additional effort. This
23 information has further value for use with crop and pest modeling programs and economic
24 analyses.
- 25 • No pesticides are applied directly to sensitive areas (e.g., critical habitat to endangered,
26 threatened, or rare flora or fauna species; unique geological and other natural features; wetlands;
27 ponds; standing water; or other water areas) unless use in such an area is specifically approved on
28 the label.

29 ***Protection of Real Estate.*** Protection of real estate from depreciation requires that animals (including
30 insects) that seek refuge or other life necessities within human dwellings in a manner that causes damage
31 to structures be controlled or prevented from entering the dwellings. Animals seek refuge inside human
32 dwellings because the dwellings can provide warmth, protection from the elements, and materials or
33 locations for nest building.

34 ***Control of Potential Disease Vectors or Animals of Other Medical Importance.*** The control of potential
35 disease vectors or animals of other medical importance is important for the protection of human life and
36 well-being. Animals that carry diseases or can cause other medical problems are attracted to human
37 dwellings in search of food and shelter or egg-laying sites. They also might be transported to human
38 dwellings by people themselves or by other animals. Transmission of disease to humans is passive, and
39 nondisease medical problems (e.g., bites and stings) are the result of an animal's need for food or self-
40 protection.

41 ***Control of Undesirable Nuisance Plants and Animals (including insects).*** Animals that are nuisances
42 when in human dwellings are controlled to make the dwellings more enjoyable to inhabit, but these
43 animals generally do not pose any real threat to humans. Spiders; ants; earwigs; crickets; and stray bees,

1 wasps, or hornets that gain entry to dwellings can be nuisances. Moths or beetles might create a nuisance
2 if they establish themselves in stored food products, and some species can damage fabrics. Birds that nest
3 on dwellings, or that search for food in the materials of dwellings (e.g., woodpeckers, pigeons, and
4 English house sparrows), are sometimes a nuisance. Stray dogs and cats, nonpoisonous snakes, skunks,
5 and raccoons can become nuisances if they become accustomed to the presence of humans or to finding
6 food near human dwellings, cause damage to grounds around dwellings, or gain entrance to dwellings.

7 **Prevention of Damage to Natural Resources.** Prevention of damage to natural resources is an important
8 objective of pest management. Natural resources damage can result from infestations of damaging insects
9 or insect larvae, from overgrowths of vegetation where natural resources management concerns demand
10 their removal, and from invasions of noxious or exotic plant species that displace natural and native
11 vegetation.

12 **Noxious and Invasive Species Management**

13 Noxious and invasive plant species pose one of the greatest threats to the conservation of biological
14 diversity, and are a significant problem for land managers in New York State and throughout the United
15 States. Invasive plants are second only to habitat destruction as a threat to our nation's rich biological
16 diversity. Once established, free living populations can take over landscapes and threaten biodiversity and
17 the structural and functional integrity of habitats. Across the country, noxious and invasive plants are
18 disrupting our ecosystems and threatening native plant and animal species. The most effective way to
19 prevent the harmful effects of noxious and invasive plants is to proactively manage areas to prevent their
20 establishment (NFARS 2002).

21 The Federal Noxious Weed Act and EO 13112 require Federal agencies to control noxious and invasive
22 species on Federal lands. The Federal Noxious Weed Act, enacted January 3, 1975, established a Federal
23 program to control the introduction and spread of foreign noxious weeds into the United States.
24 Amendments in 1990 established management programs for undesirable plants (including noxious weeds)
25 on Federal lands. There are several plant species that are considered noxious and control is mandatory for
26 those found on the Federal list (see **Appendix K-1**, Federal Noxious Weed List). EO 13112 requires that
27 Federal agencies prevent the introduction of invasive species, detect and control populations of invasive
28 species, and restore native species and habitat conditions in ecosystems that have been invaded. Invasive
29 species are alien species (not native to the ecosystem) whose introduction does, or is likely to, cause
30 economic or environmental harm, or harm to human health. The Federal list of noxious plants found in
31 **Appendix K-1** is a reference list only. All of the invasive weeds listed are not necessarily found at
32 Niagara Falls ARS. Niagara Falls ARS will continue to monitor their lands for new invasive species or
33 the spread of invasive species already found on their lands. A protocol should be developed to remove
34 soil, weeds, or other materials from heavy equipment/vehicles if they are transported from site to site, or
35 are used at different locations. **Table 3-9** is a list of the invasive species with the potential to occur at
36 Niagara Falls ARS and methods of control.

37 The invasive plant purple loosestrife (*Lythrum salicaria*) was documented as potentially being
38 responsible for the decline in plant diversity and degradation of the wetland and riparian habitats at the
39 NFARS. Leaf-eating beetles specific to purple loosestrife (*Galerucella* spp.) were released at the NFARS
40 in 2002 and 2003. Following the beetle introduction, monitoring of purple loosestrife commenced in the
41 spring and fall seasons of 2003 and 2004, and continued through the spring and fall of 2005. In 2003 and
42 2004, a monitoring study was conducted in the 15 wetland and riparian areas on the NFARS to assess
43 beetle damage (NFARS 2007b). This study concluded that there was a significant decrease in percent
44 purple loosestrife cover and stem density during fall surveys only. The average height of *L. salicaria*
45 significantly decreased during the spring surveys, but not during the fall surveys. These results indicated
46 that the *Galerucella* beetles did start to make an impact by feeding on the foliage and the flowers of the

1 purple loosestrife plants at the NFARS. However, although purple loosestrife declined in most areas, the
 2 invasive plants were still able to maintain dominance in many native plant communities. Surveys
 3 conducted in Spring and Fall 2005 continued to monitor beetle activity and adhered to the guidelines of
 4 the purple loosestrife management protocol that was implemented during the 2003 and 2004 study at the
 5 NFARS. (NFARS 2008).

6 There are a number of techniques available to control purple loosestrife including chemical, mechanical,
 7 and biological methods. The chemical agents glyphosate, and 2, 4-D are commonly used chemical
 8 controls. Although chemical control is an effective method of controlling purple loosestrife, it is not
 9 target-specific; needs repeated applications over several years; and is expensive in terms of money, time,
 10 and risk to the native ecosystems. Mechanical treatments include hand pulling, water level management,
 11 mowing and tillage, and burning. With the exception of mowing, none of these methods can be used on
 12 the Niagara Falls ARS. To date, biological control resulting from the release of highly selective
 13 herbivorous insects has been the most effective method of controlling infestations of purple loosestrife.
 14 *Galerucella calmariensis* and *G. pusilla* are an effective beetle control method used for long-term control
 15 of purple loosestrife due to the continued damage to leaves by feeding adults and larvae. Stressed host
 16 plants exhibit lower biomass and reduced seed production. At the NFARS, no additional *Galerucella*
 17 beetles have been released since 2002 and 2003, but reproduction is recurring and therefore reducing
 18 purple loosestrife in most areas (NFARS 2008).

19 **Table 3-9. Featured Invasive Plant Species of the Mid-Atlantic Natural Areas**

Common Name	Scientific Name	Prevention and Control
Herbaceous Plants		
Garlic mustard	<i>Alliaria petiolata</i>	Cutting flowering plants low to the ground in spring will prevent flowering and thus seed production. Several herbicides are also effective for its control.
Japanese knotweed	<i>Polygonum cuspidatum</i>	Mechanical and chemical methods are most commonly used to eliminate it. Glyphosate and triclopyr herbicides have been applied either to freshly cut stems or to foliage.
Japanese stiltgrass	<i>Microstegium vimineum</i>	Flowering plants can be cut back using a mower or weed whip prior to seed production. For extensive infestations, contact and systemic herbicides might be more practical and effective.
Lesser celandine	<i>Ranunculus ficaria</i>	Use of contact or systemic herbicides is an option but should be done as early as possible to avoid impact on native plant species.
Purple loosestrife	<i>Lythrum salicaria</i>	Spot treatment with a glyphosate-type herbicide might be effective. Biological control, using several imported beetle species approved by the USDA for release, is the most effective method for long-term control of large infestations.
Shrubs		
Autumn olive	<i>Elaeagnus umbellata</i>	Cutting, in combination with herbicide application, is effective. Hedges can be cut down using a brush-type mower, chain saw, or similar tool, and stumps treated with a systemic herbicide like glyphosate or triclopyr.
Bush honeysuckles, exotic	<i>Lonicera</i>	Mechanical and chemical methods are the primary means of control of exotic bush honeysuckles.

Common Name	Scientific Name	Prevention and Control
Japanese barberry	<i>Berberis thunbergii</i>	A weed wrench ® can be used to uproot older shrubs when soil is moist. Shrubs can also be mowed or cut repeatedly. Treatment with systemic herbicides like glyphosate and triclopyr has been effective.
Multiflora rose	<i>Rosa multiflora</i>	Several contact and systemic herbicides are effective in controlling multiflora rose. Two naturally occurring biological controls affect multiflora rose to some extent: a native fungal pathogen (rose-rosette disease) and a nonnative seed-infesting wasp, the European rose chalcid.
Privets	<i>Ligustrum species</i>	Small plants can be dug out. For larger plants, spray leaves with glyphosate herbicide or paint on freshly cut stumps.
Wineberry	<i>Rubus phoenicolasius</i>	Wineberry can be controlled through mechanical means or by treating the canes with a systemic herbicide like glyphosate or triclopyr.
Winged burning bush	<i>Euonymus alata</i>	Mechanical and chemical means are available to control established plantings. Shrubs can be repeatedly cut to the ground to control resprouts, or cut and treated with systemic herbicides like glyphosate and triclopyr.
Trees		
Bradford pear	<i>Pyrus calleryana</i> “Bradford”	Small trees need to be dug up or pulled out, ensuring removal of the root system. Large trees should be cut down and stumps treated with an appropriate systemic herbicide (e.g., glyphosate or triclopyr), or ground up to prevent resprouting.
Norway maple	<i>Acer platanoides</i>	Seedlings can be pulled by hand and small to large trees can be cut to the ground, repeating as necessary to control any re-growth from sprouts. Glyphosate and triclopyr herbicides have been successfully used.
Princess tree	<i>Paulownia tomentosa</i>	Young plants can be hand-pulled but larger trees need to be cut at ground level with power or manual saws. Systemic herbicides have also been used to control this plant.
Tree of Heaven	<i>Ailanthus altissima</i>	Targeting large female trees for control will help reduce spread by seed. Young seedlings can be pulled or dug up, preferably when soil is moist.
Vines		
English ivy	<i>Hedera helix</i>	A systemic herbicide like triclopyr can be applied to foliage or cut stems.
Kudzu	<i>Pueraria montana</i> <i>v. lobata</i>	Mechanical methods include cutting vines just above ground level, frequent mowing, and cultivation. Use of systemic herbicides is the most effective and practical method currently employed.
Mile-a-minute	<i>Polygonum perfoliatum</i>	Contact and systemic herbicides are effective in controlling it.

Common Name	Scientific Name	Prevention and Control
Oriental bittersweet	<i>Celastrus orbiculatus</i>	Vines can be pulled out by the roots, cut repeatedly or treated with systemic herbicides.
Porcelainberry	<i>Ampelopsis brevipedunculata</i>	Vines on trees can be cut to prevent seed formation and further damage to trees. Systemic herbicides are also effective.
Wisterias, exotic	<i>Wisteria sinensis</i> , <i>W. floribunda</i>	Cutting can be employed for small infestations, or to relieve trees of the weight and damage caused by large twining vines. Use of systemic herbicides (e.g., triclopyr) is probably a more effective method for larger infestations.

1 Source: NPS 2002

2 3.3.1.7 Noise

3 Noise is perhaps the most identifiable environmental problem associated with aircraft operations.
4 Although many other sources of noise are present in today's communities, aircraft noise is often singled
5 out for special attention and criticism. The significant noise source at Niagara Falls ARS is the result of
6 aircraft warm-ups, maintenance and testing, taxiings, takeoffs, approaches, and landings. The aircraft
7 operating at Niagara Falls ARS is the C-130H Hercules aircraft.

8 In an EA for an aircraft conversion at Niagara Falls ARS, the Air National Guard developed noise
9 contours for the current aircraft. This analysis shows noise levels within the Installation to be 70 to
10 80 decibels (dB) primarily due to aircraft operations (NFARS 1996b).

11 While the noise generated from low-altitude military overflights might be initially startling, habituation to
12 aircraft noise occurs with most wildlife and domestic species. Species-specific responses to low-altitude
13 overflights vary considerably, and responses from individual animals have the potential to cause injury.
14 Variations in responses have also been documented among homogenous species under similar
15 environmental conditions. However, animal responses to aircraft noise depend on numerous factors such
16 as the physical features of the environment and the animals own physiological attributes. Wildlife
17 populations are usually affected only when a variety of factors work in combination to impact them,
18 including declines or fluctuations in the availability of a food source, habitat destruction or alteration,
19 predation, hunting, trapping poaching, disease, or inclement weather, rather than noise alone. Normally,
20 it would be unrealistic to predict or attribute any wildlife population declines to a single stressor, such as
21 noise. In addition, no published scientific evidence was identified that indicated harm could occur to
22 wildlife as a result of exposure to the levels of noise generated by military aircraft that would utilize
23 Niagara Falls ARS.

24 3.3.1.8 Air Pollution

25 Niagara Falls ARS is in NYSDEC Region 9, which is one of nine districts monitored by NYSDEC.
26 Region 9 is composed of a six-county area surrounding the City of Buffalo and is highly industrialized.
27 The Niagara Falls ARS is in Niagara County, the northernmost county in the region. Region 9 has three
28 air quality monitoring stations in the vicinity of the Installation. The monitored data for these sites are
29 within Federal and state air quality standards; however, Region 9 is classified as nonattainment for ozone
30 because it is within the Northeast Ozone Transport Region.

31 The Northeast Ozone Transport Region extends from Virginia to Maine along the eastern seaboard and is
32 a U.S. Environmental Protection Agency (USEPA) designated region used to manage interstate air
33 pollution and to administer air quality standards. The Northeast Ozone Transport Region was established

1 because precursors to ozone (volatile organic compounds and nitrogen oxides) are often trapped in an
2 inversion layer of an air mass. These precursors are transported from south to north accumulating
3 additional pollutants as the air mass moves up the northeast corridor. Higher ozone levels occur in the
4 summer months when longer periods of daylight transform higher levels of pollutants that become
5 stagnated over an area into ozone.

6 Niagara Falls ARS has two separate categories of air emissions that contribute to the region: stationary
7 and mobile. Stationary sources at Niagara Falls ARS are composed of boilers, emergency generators,
8 aircraft ground powered equipment, vehicle/aircraft refueling operations, and aircraft maintenance
9 activities (touchup painting, engine testing, fuel cell repairs, parts cleaning). These stationary sources are
10 stringently regulated by NYSDEC and, unless exempted, require Niagara Falls ARS to apply for
11 individual point source permits. The Installation does not exceed air emissions thresholds that would
12 trigger the requirements for a federally enforceable Title V Permit at this time.

13 Mobile emissions from vehicle and aircraft operations (taxiing, runup, takeoff, and landing) are the
14 second category of air pollution sources at Niagara Falls ARS and contribute the majority, approximately
15 80 percent, of the total air emissions from the Installation. However, because the Installation is in a
16 heavily industrialized area, the emissions from the Niagara Falls ARS are insignificant when compared to
17 the county emissions, representing less than one percent of any one primary pollutant.

18 **3.3.2 Known Future Mission Impacts**

19 The uncertain nature of mission changes makes it difficult to accurately assess future impacts on the local
20 environment. The 914 AW and 107 AW are not anticipated to change their respective missions or
21 undergo major operational changes in the near future. There are no plans to add other military or civilian
22 tenants to Niagara Falls ARS at this time. However, Niagara ARS will continue to construct new
23 buildings and facilities in support of its own and its tenants changing missions. The discrete cumulative
24 impacts on the local environment resulting from these Installation-wide construction projects must be
25 evaluated.

26

4. Management Concerns, Goals, and Objectives

Ecosystem management must be based on clearly stated goals and objectives. This INRMP identifies goals and objectives, and presents the means to accomplish them, as well as the methodologies to monitor results. This INRMP is the mechanism through which both ecosystem management and biodiversity conservation will be accomplished at Niagara Falls ARS in agreement with the successful accomplishment of the Installation's operational mission. In some cases, the implementation of some of these recommendations might sacrifice the improvement of Niagara Falls ARS's natural resources in deference to the mission. All requirements set forth in this INRMP requiring the expenditure of Niagara Falls ARS funds are expressly subject to the availability of appropriations and the requirements of the Anti-Deficiency Act (31 U.S.C. 1341). No obligation undertaken by Niagara Falls ARS under the terms of this INRMP shall require, or be interpreted to require, a commitment to expend funds not appropriated by the Congress for a particular purpose. If Niagara Falls ARS cannot perform any obligation set forth in this INRMP due to the nonavailability of funds, Niagara Falls ARS intends for the remainder of the agreement to be executed.

Management objectives established in this INRMP were developed through a thorough evaluation of the natural resources present at Niagara Falls ARS. In accordance with the principles of adaptive ecosystem management, subject areas were identified and management alternatives developed by an interdisciplinary team of ecologists, biologists, geologists, planners, and environmental scientists. This section presents the preferred management alternatives based on the professional opinions of Niagara Falls ARS, the USFWS, NYSDEC, and USDA. Through these evaluations, a set of natural resources planning and management goals have been established that represent the most current theories on adaptive ecosystem-based planning (see **Table 4-1**). Selection of these management goals has been tempered with the fact that the operational mission at Niagara Falls ARS takes primacy over natural resources management. However, through the multiple-use adaptive paradigms used, sound ecological management at Niagara Falls ARS should supplement the operational effectiveness and safety of the military mission(s). Ecosystem management provides a means for Niagara Falls ARS to conserve biodiversity and to provide high-quality military readiness. The INRMP is a mechanism through which Niagara Falls ARS can maintain sustainable land use through ecosystem management.

Table 4-1. Summary of INRMP Goals

Ecosystem Management Goals
<ul style="list-style-type: none"> • Manage Niagara Falls ARS based on a regional ecosystem approach that conserves biodiversity. • Identify natural resources and operational actions that compromise the function and composition of ecosystems and develop remedies through adaptive management. • Implement management strategies with consideration of ecological units and timeframes. • Support sustainable, multiple-use human activities. • Apply ecosystem-based management through implementation of the INRMP and other Installation plans and programs.

Fish and Wildlife Management Goals

- Manage based on an ecosystem management approach, rather than a single-species paradigm.
- Employ a systematic approach to managing wildlife resources, using a process that includes inventory, monitoring, modeling, management, assessment, and evaluation.
- Minimize wildlife-related health risks, safety risks, and environmental damage.
- Maintain diversity of wildlife in areas on the Installation where there will be no conflict with the mission.
- Comply with applicable laws and regulations.
- Maintain and involve partnerships with agencies and groups involved in wildlife management.

Threatened and Endangered Species Protection Management Goals

- Manage Niagara Falls ARS on a regional ecosystem-based approach that manages sensitive species and their associated ecosystems while protecting the operational functionality of Niagara Falls ARS's missions.
- Ensure that Niagara Falls ARS remains in compliance with the ESA and the New York State Endangered Species Act (NYSECL 11-0535) and its implementing regulations (6 NYCRR Part 182).
- Promote natural resources and ecosystem management in the local region that benefits the functionality of the ecosystems.
- Protect sensitive wildlife habitats on Niagara Falls ARS.

Habitat Management Goals

- Enhance habitat by providing suitable food and cover for native species while protecting the operational functionality of Niagara Falls ARS's missions.
- Protect native habitat diversity.
- Enhance habitat for native species by removing invasive vegetation, consistent with the NFARS mission.

Wetlands and Floodplains Goals

- Remain in compliance with USACE and State of New York wetlands regulations.
- Minimize the operational impact of Niagara Falls ARS missions on wetlands and floodplains.
- Maintain healthy, functional wetlands that can sustain minor operational influences and minor, inadvertent encroachments.
- Enhance wetland functionality, consistent with the NFARS mission, to maximize societal-based wetland values within local ecosystems.
- Maximize floral and faunal diversity of wetland communities in areas that will not affect the military mission.
- Manage for no net loss of wetland acreage, functions, and values.

Watershed Management Goals

<ul style="list-style-type: none"> • Reduce/control nutrient and sediment inputs into the watershed that degrade water quality. • Manage the repair and Installation of roads in a manner that minimizes the potential for erosion and sedimentation. • Minimize nonpoint source pollution of both surface and groundwater in the watershed through the implementation of BMPs. • Continue surface water monitoring program under the SPDES. • Understand ecosystem dynamics within the watershed in an effort to prevent or respond to threats to its integrity. • Maintain vegetation buffers on waterways/riparian corridors.
Grounds Maintenance Goals
<ul style="list-style-type: none"> • Lessen or avoid adverse effects from project activities on the overall ecosystem and its sensitive resources. • Make maximum use of regionally native plant species and avoid introduction of invasive, exotic species in revegetation and landscaping activities. • Reduce chemical usage and maintenance inputs in terms of energy, water, manpower, equipment, and chemicals. • Ensure compliance with environmental legislation, regulations, and guidelines. • Control pests and invasive species on the Installation.
Outdoor Recreation Goals
<ul style="list-style-type: none"> • Provide quality outdoor recreation experiences while sustaining ecosystem integrity. • Ensure that outdoor recreation activities are not in conflict with mission priorities.
Surrounding Lands Goal
<ul style="list-style-type: none"> • Coordinate with surrounding landowners on ecosystem-based management of resources and encourage cooperative efforts on adjacent lands that are complementary to the INRMP. • Minimize threats to Niagara Falls ARS assets and natural resources from off-site land use.
GIS Management Goals
<ul style="list-style-type: none"> • Collect, store, and maintain data about historical conditions, trends, and current status for critical indicators of ecological integrity and sustainability. • Use geographical information system (GIS) as benchmarks for developing future natural resources management goals and objectives. • Train, as necessary, the personnel responsible for the maintenance of environmental data.

1 A number of items have been identified in subject areas that affect the natural resources present on and
 2 immediately adjacent to Niagara Falls ARS. The purpose of this section is to identify actions and
 3 objectives for Niagara Falls ARS and to obtain workable and useful solutions for each item identified.
 4 This section is divided into 11 subsections, one for each subject area. For simplicity and clarity within
 5 this INRMP, each natural resources topic is assigned an individual “issue number.” Each subject area has
 6 been abbreviated, as shown in **Table 4-2**.

7 **Table 4-2. INRMP Subject Area Abbreviations**

INRMP Subject Area	Abbreviation
4.1 Ecosystem Management	ECO
4.2 Fish and Wildlife Management	FWM

4.3	Threatened or Endangered Species	TE
4.4	Habitat Management	HM
4.5	Wetlands and Floodplains	WT
4.6	Watershed Management	WM
4.7	Grounds Maintenance	GM
4.8	Outdoor Recreation	OR
4.9	Surrounding Lands	SR
4.10	Geographic Information Systems	GIS
4.11	Natural Resources Constraints to Installation Planning and Missions	NC

1

2 4.1 Ecosystem Management

3 Ecosystem management must be based on clearly stated goals and objectives. This INRMP is the
4 mechanism through which both ecosystem management and biodiversity conservation will be
5 accomplished on Niagara Falls ARS in agreement with the successful accomplishment of the
6 Installation's operational mission.

7 The guiding philosophy of this INRMP is to take an ecosystems approach to managing the natural
8 resources present on Niagara Falls ARS. The interdisciplinary approach taken by this INRMP follows an
9 ecosystems model, in which all appropriate components are integrated by their function. This section
10 addresses Niagara Falls ARS's goal of being a leader in facility and natural resources management within
11 the AFRC and the USAF. Ecosystem management is emphasized because it is recognized that the
12 mission of the AFRC is inextricably linked to local, regional, and global ecological integrity. Sustaining
13 ecosystem integrity is also the best way to protect biodiversity, ensure sustainable use, and minimize the
14 effort and cost of management. Native and natural communities, and the processes that sustain them, are
15 unique expressions of the evolutionary and geological histories that are essential to sustaining current
16 system function and resilience. While habitat with the potential to dramatically alter ecosystem form and
17 function is limited at Niagara Falls ARS, it is still a priority of the Installation to manage according to this
18 paradigm.

19 It is the goal of ecosystem management at Niagara Falls ARS to conserve biodiversity by managing the
20 ecosystem rather than focusing on a single biotic or abiotic component of the ecosystem (see **Table 4-3**).
21 Ecosystem-focused management at Niagara Falls ARS encompasses both the function and the structure of
22 the ecosystem and the processes that link them.

23

1 **Table 4-3. Summary of Ecosystem Management Goals**

Ecosystem Management Goals	
	<ul style="list-style-type: none"> • Manage Niagara Falls ARS based on a regional ecosystem approach that conserves biodiversity. • Identify natural resources and operational actions that compromise the function and composition of ecosystems and develop remedies through adaptive management. • Implement management strategies with consideration of ecological units and timeframes. • Support sustainable, multiple-use human activities. • Apply ecosystem-based management through implementation of the INRMP and other Installation plans and programs.

2 The ecosystem management topics of concern and associated goals and objectives are presented below.

3 **4.1.1 ECO-1. Communication of Ecosystem Management Philosophy to Niagara Falls**
 4 **ARS Personnel and Visiting Units**

5 • **Concern:** Niagara Falls ARS personnel are unaware and currently lack the appropriate guidance
 6 on an ecosystem management approach to natural resources management.

7 • **Objective:** Niagara Falls ARS environmental planning office will promote discussion with
 8 Installation Command, personnel, and pertinent stakeholders about incorporating ecosystem
 9 management philosophy into command decisions and natural resources planning. Part of this
 10 process should include education of Installation personnel in established ecosystem management
 11 goals and objectives.

12 • **Actions:**

13 1. Include ecosystem management justification in direction provided by the environmental
 14 office on all land management projects.

15 2. Develop educational materials that describe ecosystem management, natural resources, and
 16 operational policies for use in training visiting units.

17 3. Distribute educational materials on ecosystem management at Niagara Falls ARS to
 18 Installation personnel and visiting units with potential to make decision about activities that
 19 impact natural resources.

20 • **Monitoring Criteria:** Evaluate communication among Niagara Falls ARS personnel, pertinent
 21 stakeholders, and visiting units.

22 **4.1.2 ECO-2: Evaluation of Ecosystem Stressors**

23 • **Concern:** In order to establish ecosystem management goals, it is necessary to prioritize
 24 stressors on the ecological system and specific management actions. By continually evaluating
 25 the ecosystem stressors, identification of areas in which Niagara Falls ARS can improve
 26 ecosystem health can be identified. This information is useful in identifying topics of concern
 27 that are based on an ecosystems approach.

28 • **Objective:** Implement an approach to continually evaluate ecosystem stressors on Niagara Falls
 29 ARS.

- 1 • **Action:**
- 2 1. Develop a tool that evaluates the stressors on ecosystem health. An evaluation matrix is
- 3 commonly used to evaluate the stressors on ecosystem function and the sources of stress. An
- 4 example of an ecosystem stressor matrix is presented in **Figure 4-1**. This matrix identifies
- 5 ecological stressors and stressor sources on-Base and in the immediate proximity.
- 6 • **Monitoring Criteria:** Criteria for evaluation of ecosystem stressors are included in the
- 7 ecosystem stressors matrix. Elimination of the sources of the various ecosystem stressors is an
- 8 indication of successful ecosystem management.

9 **4.2 Fish and Wildlife Management**

10 Wildlife management is defined as manipulation of the environment and wildlife populations to produce
 11 desired objectives. Management can be performed in a manner that enhances biodiversity through the
 12 reestablishment of native habitats without negatively affecting the military mission. Conversely, habitat
 13 management might be required to decrease the abundance of certain wildlife species to reduce animal
 14 damage or wildlife strike hazards. Traditionally, wildlife management was confined to large tracts of
 15 naturally vegetated land. The Installation possesses limited acreage for a variety of wildlife management
 16 activities.

17 Observations and discussions with Installation, Federal, and state agency personnel identified a number of
 18 important wildlife species at the Installation. The variety of habitats present contributes to the diversity of
 19 species found on the Installation. The limited amount of browse in these ecosystems on the Installation
 20 limits the abundance of prey species and ultimately densities of predatory species. In addition, Niagara
 21 Falls ARS does not encourage the population growth of prey species because of their incompatibility with
 22 flying operations. A summary of the Fish and Wildlife management goals is provided in **Table 4-4**.

23 **Table 4-4. Summary of Fish and Wildlife Management Goals**

Fish and Wildlife Management Goals
<ul style="list-style-type: none"> • Manage based on an ecosystem-management approach, rather than a single-species paradigm. • Employ a systematic approach to managing wildlife resources, using a process that includes inventory, monitoring, modeling, management, assessment, and evaluation. • Minimize wildlife-related health risks, safety risks, and environmental damage. • Maintain diversity of wildlife in areas on the Installation where there will be no conflict with the mission. • Comply with applicable laws and regulations. • Maintain and promote partnerships with agencies and groups involved in wildlife management.

24 The fish and wildlife management topics of concern and associated goals and objectives are presented
 25 below.

26 **4.2.1 FWM-1: Bird Aircraft Strike Hazard Plan Coordination**

- 27 • **Concern:** Bird aircraft strikes have occurred and have been reported at the Installation.
- 28 • **Objective:** Coordinate the BASH Plan with the INRMP to most effectively reduce the chance of

1 a bird/wildlife aircraft strike at the NFIA and in the local flying area.

2 • **Actions:**

- 3 1. Niagara Falls ARS currently holds a USFWS Depredation Permit to authorize the taking of
4 nuisance species to lessen the danger of bird/wildlife strikes with aircraft. **Appendix E**
5 summarizes specific bird and animal strike hazards and recommendations for reducing each
6 hazard to flight operations.
- 7 2. NFARS currently uses the services of USDA-WS to survey and assist in managing BASH
8 issues. As funding allows, this relationship should continue.
- 9 3. Any future habitat enhancement opportunity needs to be evaluated carefully to determine its
10 effect on the flying mission.
- 11 4. Know which species are present before control techniques are applied. Use an appropriate
12 field guide to aid in bird identification.
- 13 5. A vegetative management strategy should be developed to minimize wildlife threat; seasonal
14 inspection requirements for grain-type grasses that attract high-threat avian species.
- 15 6. Continue to control food sources for nuisance avian species adjacent to the airfield; periodic
16 inspection requirements for ponding and proper drainage on the airfield whenever possible to
17 reduce insect breeding, a major food source for birds during much of the year.
- 18 7. Acquaint crew members with the hazards associated with birds.

- 19 • **Monitoring Criteria:** As the species composition changes on Niagara Falls ARS, management
20 strategies should be modified on an as-needed basis. These adaptive management strategies
21 should be incorporated into this INRMP.

22 **4.2.2 FWM-2: Entry of Nuisance Wildlife**

- 23 • **Concern:** In September 2007, USDA-WS conducted a survey of the perimeter fenceline and
24 repairs have been made. Breaches in the perimeter fence allow for the free entry of wildlife and
25 domestic animals onto the Installation.
- 26 • **Objective:** Continue to maintain the fenceline to prevent or reduce future entry of wildlife.
- 27 • **Actions:**
 - 28 1. Implement the management recommendations developed by the USDA to the greatest extent
29 possible.
 - 30 2. Adhere to and aggressively implement the protocols to remove nuisance wildlife detailed in
31 the BASH Plan.
 - 32 3. Conduct surveys to determine the locations of the perimeter fence breaches.
 - 33 4. Prepare a maintenance schedule for the perimeter fenceline.
 - 34 5. Make repairs to perimeter fences where saplings have lifted fences.
- 35 • **Monitoring Criteria:** Check perimeter fences for openings large enough to allow deer to pass
36 prior to the fall rut to ensure there are no breaches in the fenceline.

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4.3 Threatened and Endangered Species

No federally listed species are known to inhabit Niagara Falls ARS. In addition, there is no critical habitat on the Installation. However, several transient species use the Installation for roosting and foraging. USFWS is unable to confirm the presence of the eastern prairie fringed orchid on the Installation, but historical information indicates that the species previously inhabited the area (USFWS 2008). Past survey work has indicated that seven New York State-listed species have been observed at the Niagara Falls ARS: short-eared owl (*Asio flammeus*, state endangered), northern harrier (*Circus cyaneus*, state threatened), upland sandpiper (*Bartramia longicauda*, state threatened), grasshopper sparrow (*Ammodramus savannarum*, state species of special concern), American bittern (*Botaurus lentiginosus*, state species of special concern), least bittern (*Ixobrychus exilis*, state threatened) and horned lark (*Eremphila alpestris*, state species of special concern) (NFARS 2001, NFARS 2006).

As summarized in **Table 4-5**, the goal for this section is to manage Niagara Falls ARS on a regional ecosystem-based approach that manages sensitive species while protecting the operational functionality of the mission. While single-species management is not promoted as a general philosophical management approach on the Installation, specific controls are used to protect threatened and endangered species beyond management of the ecosystem. Other procedures in place for management of threatened and endangered species are modifying the ecosystem and human interactions within this environment.

Table 4-5. Summary of Threatened and Endangered Species Protection Management Goals

Threatened and Endangered Species Protection Management Goals
<ul style="list-style-type: none"> • Manage Niagara Falls ARS on a regional ecosystem-based approach that manages sensitive species and their associated ecosystems while protecting the operational functionality of Niagara Falls ARS's missions. • Ensure that Niagara Falls ARS remains in compliance with the ESA and the New York State Endangered Species Act (NYSECL 11-0535) and its implementing regulations (6 NYCRR Part 182). • Promote natural resources and ecosystem management in the local region that benefits the functionality of the ecosystems. • Protect sensitive wildlife habitats on Niagara Falls ARS.

The threatened and endangered species and critical habitats topics of concern and associated goals and objectives are presented below.

4.3.1 TE-1: Grassland Breeding Bird Surveys

- **Concern:** Sightings of horned lark (state species of special concern [SSC]) in mid-may 2007 during bird surveys suggests these birds either are transients or are nesting prior to the start of the surveys.
- **Objective:** Determine the occurrence and behavior of state-listed grassland breeding birds on Niagara Falls ARS. **This survey can be completed in conjunction with TE-2 and is subject to available funding, see below.**
- **Actions:**
 1. Conduct early spring grassland breeding bird surveys.

1 2. Incorporate the survey results into the Threatened and Endangered Species Management
2 Plan.

- 3 • **Monitoring Criteria:** Evaluate the success of management strategies for native species, and
4 sensitive species if discovered on the Installation, and continue to monitor for their potential to
5 affect mission requirements.

6 4.3.2 TE-2: Year-round Dawn-Dusk Bird Surveys

- 7 • **Concern:** In the 1997-1999 year-round bird survey, USFWS observed the following state-listed
8 species at Niagara Falls ARS: short-eared owl, upland sandpiper, grasshopper sparrow, northern
9 harrier, horned lark, and American bittern. Because these surveys occurred in the early morning
10 hours, there is the potential for bias towards birds that vocalize or are more active at dawn.

- 11 • **Objective:** Determine the presence/absence of birds utilizing Niagara Falls ARS throughout the
12 day. **This survey can be completed in conjunction with TE-1 and is subject to available
13 funding, see above.**

14 • **Actions:**

15 1. Conduct bird surveys during early morning and evening to thoroughly document the activity
16 of all birds utilizing the airbase.

17 2. Incorporate the survey results into the Threatened and Endangered Species Management
18 Plan.

- 19 • **Monitoring Criteria:** Evaluate the success of management strategies for native species, and
20 sensitive species if discovered on the Installation, and continue to monitor for their potential to
21 affect mission requirements.

22 4.3.3 TE-3: Additional Threatened and Endangered Species Surveys

- 23 • **Concern:** As part of the 2007 T&E survey, USFWS developed a list to include New York State
24 species that can be found on the Niagara Falls ARS or the surrounding region.

- 25 • **Objective:** As funding allows, conduct surveys for the species with a potential to occur at
26 Niagara Falls ARS, with a focus on insects, bivalves, fish, and amphibians.

27 • **Actions:**

28 1. Develop a State-listed Species Survey and Report with a focus on the following species:

- 29 (a) Blue-spotted salamander
30 (b) Iowa darter and pirate perch
31 (c) Bivalve species, especially eastern pondmussel
32 (d) Insect groups including butterflies, moths, and odonates.

33 2. Expand fish surveys beyond Niagara Falls ARS if necessary.

34 3. Follow the Endangered Species Coordination protocol if listed species are observed on the
35 Installation (see **Figure 4-2**)

36 4. Report the presence of any listed T&E species or species of concern to Natural Heritage, for
37 incorporation in state distribution database.

- 38 • **Monitoring Criteria:** Continue to monitor T&E species and conduct new biological surveys as
39 needed.

1 **4.4 Habitat Management**

2 Habitat management is a broad term that encompasses a whole range of management issues that affect
 3 fish and wildlife, threatened and endangered species, and ecosystem goals. This section will focus
 4 specifically on the effects of grounds maintenance and construction activities on sensitive species and
 5 their habitats, mission activities effects on sensitive species and their habitats, and protection of native
 6 habitat diversity. Any future habitat enhancement opportunity needs to be evaluated carefully to
 7 determine its effect on the flying mission.

8 Currently, Niagara Falls ARS holds a NYSDEC Category I habitat classification (NYSDEC 2007e).
 9 NYSDEC has indicated that the Installation’s grassland habitat has regional importance for supporting a
 10 variety of grassland bird species. Specifically, the short grassland habitat adjacent to the runways and
 11 taxiways of the Station were supporting various grassland birds, including upland sandpipers (NYS
 12 threatened), northern harrier (NYS threatened), bobolink, field sparrow, and eastern meadowlark.
 13 According to the habitat classification, NYSDEC has requested that the Installation adopt the following
 14 mowing guidelines: (1) grasses should be maintained at a height of 8 to 12 inches over those areas which
 15 are not directly adjacent to runways or taxiways, (2) these areas should not be mowed during the nesting
 16 and brood-rearing season from May 1 through July 31, and (3) grounds maintenance personnel should
 17 watch for adults and should mark and avoid nests when mowing areas directly adjacent to runways and
 18 taxiways which require mowing during the nesting and brood-rearing season.

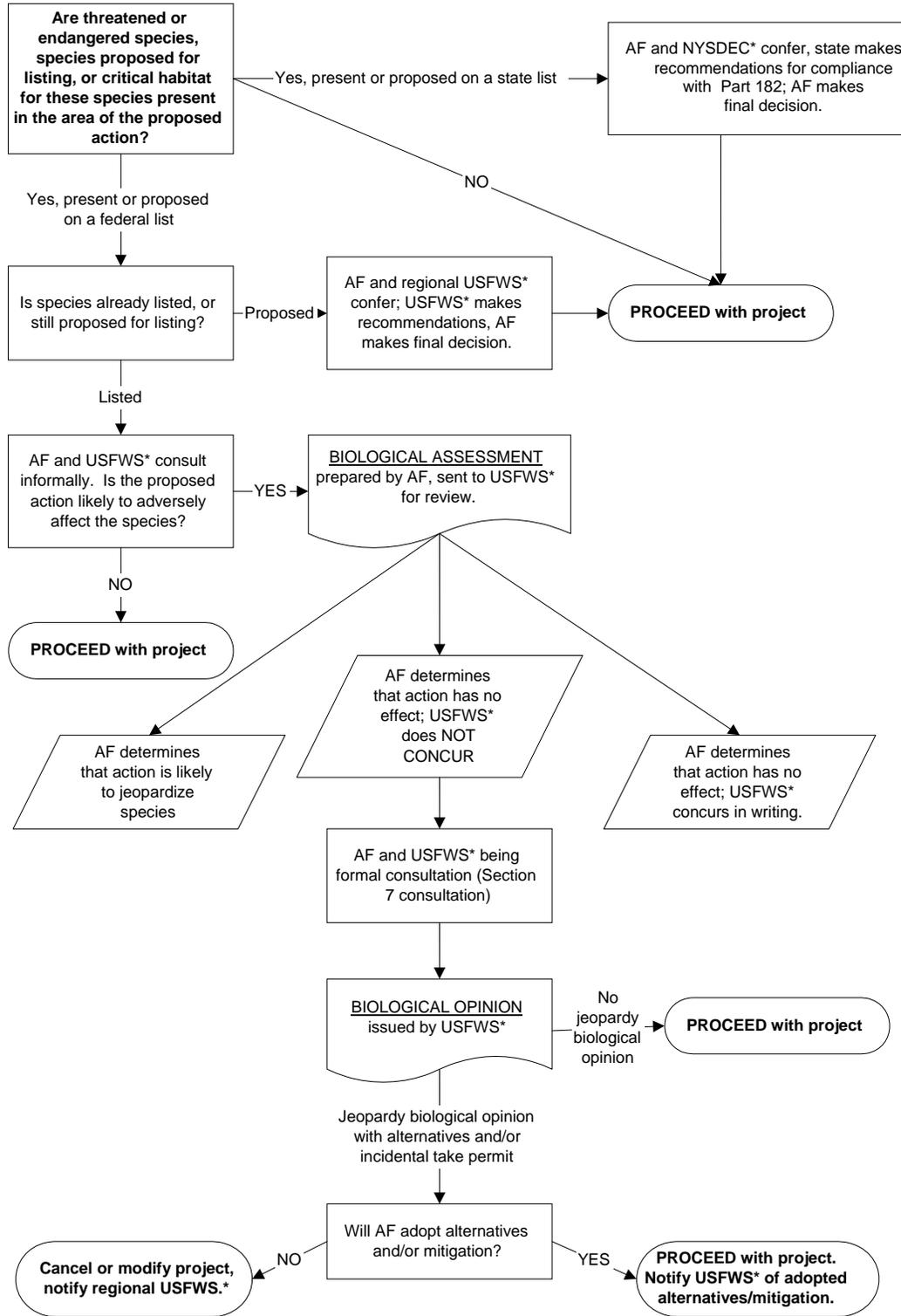
19 However, in a letter to the 914 Safety Office (dated September 13, 2011), the USDA-Wildlife Services
 20 determined that "leaving potential nesting areas unmowed during nesting periods to encourage the
 21 presence of the upland sandpiper on the airport contributes to an unacceptable risk to the mission of
 22 NFARS by creating potential wildlife-strike hazards."

23 The Environmental Office should work toward a series of goals that are used to frame management
 24 actions and objectives. These goals are summarized in **Table 4-6**.

25 **Table 4-6. Summary of Habitat Management Goals**

Habitat Management Goal
<ul style="list-style-type: none"> • Enhance habitat by providing suitable food and cover for native species while protecting the operational functionality of Niagara Falls ARS’s missions. • Protect native habitat diversity. • Enhance habitat for native species by removing invasive vegetation, consistent with the NFARS mission.

26



*HQ AFRC must be informed/copied on all interagency coordination.

1

2

Figure 4-2. Endangered Species Coordination

1 The topics of concern and associated goals and objectives involving habitat management are shown
2 below.

3 4.4.1 HM-1: Reevaluation of Plant Communities

- 4 • **Concern:** Five vegetative communities were identified as part of the “Inventory of Natural
5 Resources, Habitat, and Threatened and Endangered Species at Niagara Falls ARS” in 2001.
6 Although the communities have not changed significantly over the years, the plants identified
7 within the communities might have changed.
- 8 • **Objective:** Update the vegetative communities and plant inventory for Niagara Falls ARS, as
9 funding allows.
- 10 • **Actions:**
 - 11 1. Remap the vegetative communities previously identified at Niagara Falls ARS.
 - 12 2. Provide an updated inventory of all plant species encountered within the communities.
- 13 • **Monitoring Criteria:** Continue to survey as necessary for new plants and communities for more
14 effective habitat management. Update inventory as needed.

15 4.4.2 HM-2: Reducing Attractiveness to High BASH Threat Species

- 16 • **Concern:** The current wildlife habitat on Niagara Falls ARS is predominantly grass and wetland,
17 both which have the potential to attract wildlife.
- 18 • **Objective:** Reduce attractiveness to BASH wildlife and reduce the risk to human health and
19 aircraft safety.
- 20 • **Actions:**
 - 21 1. Coordinate with INRMP Working Group to develop a grassland management program that
22 protects certain grassland bird species without producing a wildlife hazard to aircraft.
 - 23 2. Manage grass heights at 7 to 14 inches at all times.
 - 24 3. Remove as much aquatic vegetation from waterway as possible. Any applicable permits or
25 coordination with USACE and NYSDEC will be conducted prior to conducting activities in
26 waters of the U.S.
 - 27 4. Maintain ditches and creeks (keeping them narrow and deep) to discourage aquatic
28 vegetation.
 - 29 5. Remove brush and trees on the infield to reduce prey habitat and movement corridors for
30 mammalian predators.
 - 31 6. Continue with aggressive and persistent harassment of birds on the airfield including those
32 within the streams and drainages.
- 33 • **Monitoring Criteria:** Quarterly surveys will be used to monitor the effectiveness of habitat
34 modification strategies, and to determine the necessity for alteration of these strategies.

35 4.4.3 HM-3: Invasive and Nonnative Species Survey and Management Plan

- 36 • **Concern:** Nonnative and invasive species could be endangering populations of native species
37 and creating lower quality habitat available for wildlife. A Nonnative and Invasive Species Plan

1 should be developed to deal with any new threats identified during monitoring. The Plan should
 2 be incorporated as an OCP to this INRMP.

- 3 • **Objective:** Determine the extent of nonnative and invasive species on Niagara Falls ARS. If
 4 necessary and if funding allows, eradicate nonnative and invasive species utilizing methods that
 5 will cause the least disturbance of native species that might be present. Develop and adopt
 6 proactive management measures to control the proliferation of nonnative and invasive species.
- 7 • **Actions:**
 - 8 1. Identify areas where nonnative and invasive species occur and develop specific management
 9 actions to target the populations of these species.
 - 10 2. Generate a Nonnative and Invasive Species Plan and include it as an OCP to this INRMP
 11 once it has been completed.
 - 12 3. Coordinate with state and local regulators to obtain appropriate permits for nonnative and
 13 invasive plant species eradication in wetland areas.
- 14 • **Monitoring Criteria:** Continue to survey as necessary for new nonnative and invasive species
 15 and implement a plan to control and attempt to eradicate these species. Update Plan as needed.

16 4.5 Wetlands and Floodplains

17 The major goal in wetland and floodplain management is to minimize the impact that the Niagara Falls
 18 ARS missions have on wetlands and floodplains. The Niagara Falls ARS natural resources staff strives to
 19 enhance healthy, functional wetlands that can sustain minor operational influences outside indirect
 20 infringement of wetlands without negatively affecting the military mission. When possible, it is the goal
 21 to enhance wetland functions to create wetlands that maximize the values that wetlands have within the
 22 ecosystem and to society (e.g., floodwater retention, water quality protection). It is also the goal to
 23 maximize floral diversity of wetland communities, which, in turn, maximizes the faunal diversity of the
 24 ecosystem. Through achieving these goals, Niagara Falls ARS can manage for no net loss of wetland and
 25 floodplain acreage, functions, and values.

26 See **Table 4-7** for a summary of wetlands and floodplains goals for Niagara Falls ARS.

27
 28 **Table 4-7. Summary of Wetlands and Floodplains Goals**

Wetlands and Floodplains Goals
<ul style="list-style-type: none"> • Remain in compliance with USACE and State of New York wetlands regulations. • Minimize the operational impact of Niagara Falls ARS missions on wetlands and floodplains. • Maintain healthy, functional wetlands that can sustain minor operational influences and minor, inadvertent encroachments. • Enhance wetland functionality, consistent with the NFARS mission, to maximize societal-based wetland values within local ecosystems. • Maximize floral and faunal diversity of wetland communities in areas that will not affect the military mission. • Manage for no net loss of wetland and floodplain acreage, functions, and values.

1 The wetlands topics of concern and associated goals and objectives are presented below.

2 4.5.1 WT-1: Reevaluation of Wetland Boundaries and Function/Values

- 3 • **Concern:** Wetland delineations were completed in 2008 with the final report completed in 2010.
4 A boundary reassessment every 5 years is recommended by the USACE.
- 5 • **Objective:** A boundary reassessment every 5 years is recommended by the USACE; therefore,
6 the next reevaluation should take place in 2013.
- 7 • **Actions:**
 - 8 1. Reevaluate the wetlands boundaries identified on the Installation every 5 years, as
9 recommended by USACE.
 - 10 2. Update Installation wetlands map with locations of new wetlands.
 - 11 3. Incorporate BMPs into necessary military operations in and around wetlands.
- 12 • **Monitoring Criteria:** Continue to assess the effects of the mission on wetland resources and
13 incorporate BMPs into necessary military operations in and around wetlands.

14 4.5.2 WT-2: Wetland Management and Protection

- 15 • **Concern:** Nine federal jurisdictional wetlands covering approximately 37.47 acres were
16 identified within the Niagara Falls ARS project area (29 acres of wetlands and 14,799 linear feet
17 of jurisdictional tributaries). Encroachment into these areas could be necessary in the future as a
18 result of construction or military training activities.
- 19 • **Objective:** The wetlands identified on the Installation should be avoided to the greatest extent
20 possible when planning new construction. If encroachments are necessary, efforts should be
21 made to minimize the impacts on wetland areas.
- 22 • **Actions:**
 - 23 1. To remain in compliance with the provisions of the CWA, appropriate permits must be
24 obtained prior to encroachments into the wetland areas (see **Figure 4-3**).
 - 25 2. In addition, personnel conducting activities near or adjacent to wetlands should be instructed
26 on the location and extent of these wetland areas to minimize any potential impacts.
- 27 • **Monitoring Criteria:** Semi-annually inspect confirmed and suspected wetland locations for
28 evidence of land-disturbing activities. Should wetlands be found to be disturbed, reassess
29 wetland functions to determine if they have been altered.

30 4.5.3 WT-3: Wetland Conservation

- 31 • **Concern:** Niagara Falls ARS does not have a current management plan for the conservation of
32 the Installation's wetlands resources.
- 33 • **Objective:** Manage for the conservation of wetland resources without negatively affecting the
34 military mission.
- 35 • **Actions:**
 - 36 1. Adaptive management strategies for the conservation of the Installation's wetlands resources

1 will include the following provisions:

- 2 a. Maintain edge habitats that buffer the effects of one habitat as it merges into the next,
3 gradually shifting plant composition, moisture regime, and climate across the landscape.
4 Maintain and enhance wetland buffers and transition zones, as regulated under the
5 NYSDEC Freshwater Wetlands Act, only if BASH risks would not be increased.
 - 6 b. Continue to develop the wetlands inventory database by compiling information on
7 wetlands characteristics, as they are collected, into a format compatible with the
8 Installation's current software. These data can eventually be included in a GIS for
9 Niagara Falls ARS (see **Section 4.10**).
 - 10 c. Plan development and training to avoid wetlands impacts to the maximum extent possible
11 and mitigate unavoidable impacts on wetlands functions.
 - 12 d. Review operations and maintenance programs that potentially affect wetlands, and
13 develop procedures and guidelines to avoid the loss of wetlands functions.
 - 14 e. Evaluate general vegetative characteristics of wetlands to determine where potential
15 future control of invasive species could result in measurable habitat value enhancement.
 - 16 f. Pursue water quality management procedures that protect wetlands from excessive
17 nonpoint source runoff.
- 18 2. Additional management measures established to protect or enhance riparian habitats would
19 include proper planning of recreational developments and training exercises; limiting
20 pesticide and fertilizer use in the riparian buffer; properly locating, constructing, and
21 designing stream crossings to reduce impacts on flora and fauna; and minimizing the
22 modification of existing hydrologic characteristics to minimize erosion and sedimentation.

Monitoring Criteria: Riparian and upland habitats retain their native structure and function, without human disturbance or impact.

23 4.6 Watershed Management

24 Watershed protection is important to natural resources management at Niagara Falls ARS because it
25 directly affects both surface water and groundwater quality and is critical to maintain aquatic habitats.
26 Niagara Falls ARS currently protects its watershed through compliance with a number of Federal, state,
27 local, and USAF environmental regulations that require the Installation to have detailed spill
28 control/response procedures and to implement storm water pollution prevention BMPs. The objective of
29 these regulations is to prevent pollutants (e.g., fuels, solvents, sediments) from entering the watershed,
30 thus protecting surface waters. Watershed protection is particularly important at Niagara Falls ARS
31 because all surface waters from the Installation drain into Cayuga Creek and its unnamed tributaries.
32 Specific watershed protection measures employed by the Installation include spill clean-up equipment at
33 industrial locations and reduced fertilizer applications.

34 An Erosion and Sedimentation Control Manual was prepared for Niagara Falls ARS in 1998. The manual
35 provides guidance on developing site-specific erosion- and sediment-control plans for individual
36 construction projects on the Installation. All earth-moving activities, including contractor and tenant
37 activities, must comply with the specifications of the site-specific plan. Any contractual agreement
38 prepared must incorporate a statement requiring the contractor to adhere to the sediment- and erosion-
39 control procedures identified in the manual. The manual includes a review of the critical slopes on the
40 Installation, and an identification and confirmation of the different soil types present on the Installation as
41 described in the Niagara County Soil Survey (SCS 1972). Erosion- and sediment-control BMPs are

1 identified, and standard maintenance and inspection guidance is provided to ensure each BMP's
 2 effectiveness. A summary of the goals used for managing the watershed is presented in **Table 4-8**.

3 **Table 4-8. Summary of Watershed Management Goals**

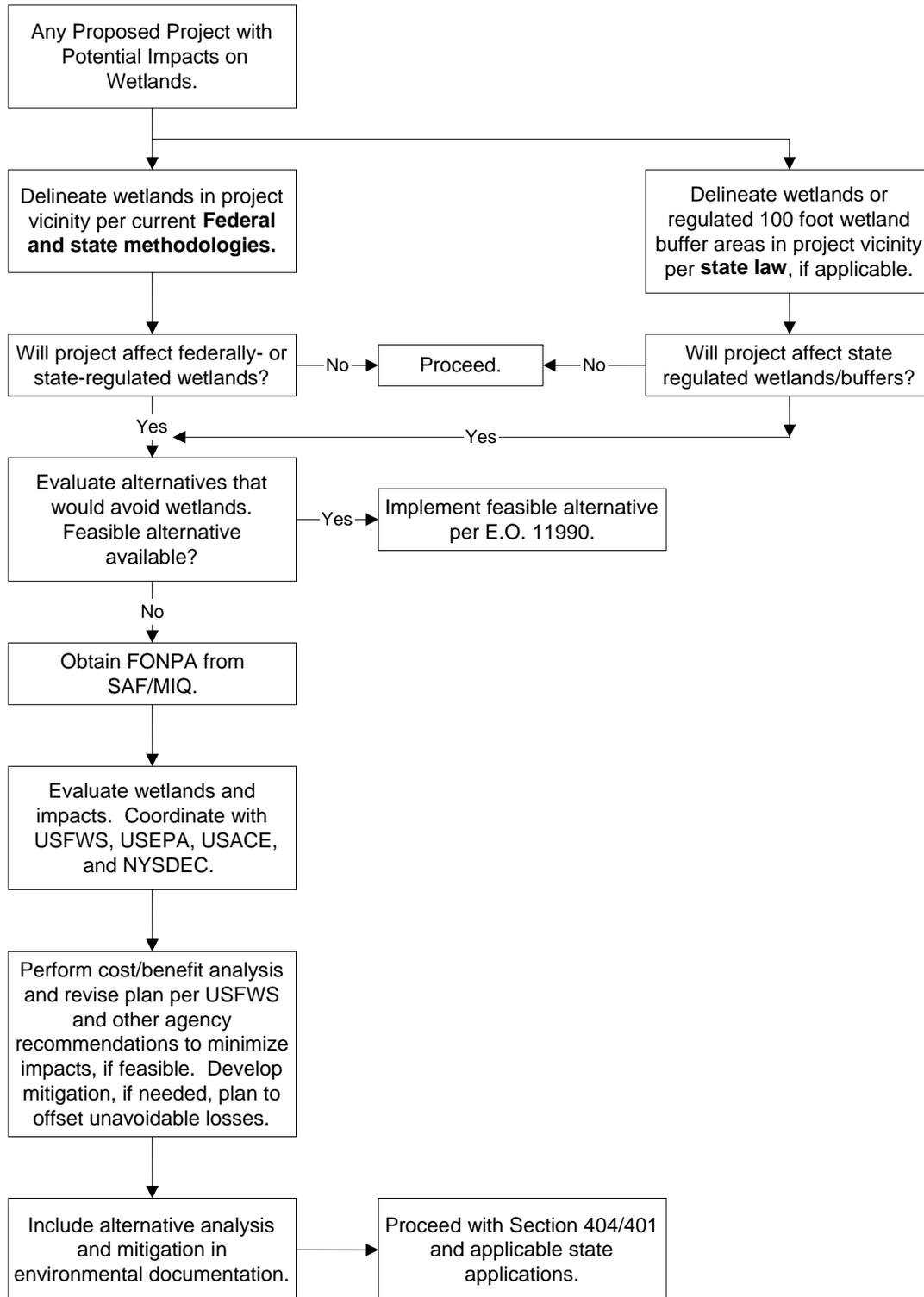
Watershed Management Goals
<ul style="list-style-type: none"> • Reduce/control nutrient and sediment inputs into the watershed that degrade water quality. • Manage the repair and Installation of roads in a manner that minimizes the potential for erosion and sedimentation. • Minimize nonpoint source pollution of both surface and groundwater in the watershed through the implementation of BMPs. • Continue surface water monitoring program under National Pollutant Discharge Elimination System (NPDES). • Understand ecosystem dynamics within the watershed in an effort to prevent or respond to threats to its integrity. • Maintain vegetation buffers on waterways/riparian corridors.

4
 5 The watershed protection topics of concern and associated goals and objectives are presented in the
 6 following sections.

7 **4.6.1 WM-1: Tracking Contaminants in Surface Waters**

- 8 • **Concern:** In 2005, a contaminant track-down study was conducted in Cayuga Creek to locate a
 9 source of contaminants identified in y-o-y fish collected in 1997. This analysis was unable to
 10 identify the source of contaminants.
- 11 • **Objective:** Continue to implement the water quality-monitoring program as funding allows.
 12 Frequent water quality monitoring provides a mechanism for the early detection of potential
 13 water quality problems, and a comprehensive program makes it easier to identify the source or
 14 cause of the degradation.
- 15 • **Actions:**
- 16 1. An expanded PISCES study is recommended supported with limited sediment sampling. The
 17 second PISCES study should include additional Cayuga Creek sites further downstream as
 18 well as additional sites in outfalls #6, #7, and #8 drainage ditches.
 - 19 2. Continue to measure inflow and outflow contaminant levels.
 - 20 3. Identify nonpoint sources of pollutants and implement control measures.
 - 21 4. Utilize data obtained from these assessments to determine if an examination of surrounding
 22 land uses is needed to identify likely sources of point or nonpoint nutrient loading.

23 **Monitoring Criteria:** Ensure that the BMPs developed as part of the water quality-monitoring program
 24 are followed by periodically inspecting construction sites and problematic areas on the Installation. Also,
 25 ensure that water quality data show no net increase in nutrient and sediment loading from outfalls on
 26 Niagara Falls ARS. Monitor storm water outfalls on the Installation in accordance with regional USEPA
 27 standards to ensure that concentrations of nutrients, sediments, metals, and other pollutants in the
 28 discharge waters are not harmful to adjacent aquatic habitats.



1 **Figure 4-3. Wetland Permitting Process Flow Diagram**

2

1 **4.7 Grounds Maintenance**

2 Because of the highly developed nature of Niagara Falls ARS, environmentally sensitive landscape
 3 planning throughout the main cantonment areas is critical in reducing grounds maintenance costs,
 4 improving Installation aesthetics, reducing pesticide use, saving energy, and increasing biodiversity.
 5 Installation grounds maintenance contractors and Niagara Falls ARS personnel perform grounds
 6 maintenance activities at Niagara Falls ARS. Grounds maintenance activities performed at Niagara Falls
 7 ARS consist of lawn care, airfield management, landscaping maintenance, golf course maintenance, and
 8 pest management.

9 In the process of identifying grounds maintenance and land management actions, a list of goals (see
 10 **Table 4-9**) was generated that were used to create ecologically sustainable management objectives.

11 **Table 4-9. Summary of Grounds Maintenance Management Goals**

Grounds Maintenance Management Goals
<ul style="list-style-type: none"> • Lessen or avoid adverse effects from project activities to the overall ecosystem and its sensitive resources. • Make maximum use of regionally native plant species and avoid introduction of invasive, exotic species in revegetation and landscaping activities. • Reduce chemical usage and maintenance inputs in terms of energy, water, manpower, equipment, and chemicals. • Ensure compliance with environmental legislation, regulations, and guidelines. • Control pest and invasive species on the Installation.

12 The objectives, actions, and monitoring criteria designed to address grounds maintenance management
 13 issues at Niagara Falls ARS are presented below.

14 **4.7.1 GM-1: Landscape Management Plan**

15 • **Concern:** The majority of the acreage at Niagara Falls ARS is improved or semi-improved space
 16 and thus receives intensive maintenance. This intensive management lacks appropriate guidance
 17 on types of plant and cultivars to utilize; lacks BMPs for construction activities; operates under
 18 inadequate budgets; uses high quantities of fertilizers; and lacks imaginative, visually appealing
 19 designs.

20 • **Objective:** Develop a Comprehensive Landscape Management Plan, as funding allows. Include
 21 the Plan as an OCP in this INRMP.

- 22 • **Actions:**
- 23 1. Use the previous Landscape Management Plan (2002) to develop a common theme and
 24 planting guide. Follow the Plan’s recommendation for dividing the areas into high visible,
 25 industrial, residential, and administrative. Develop the landscape Plan for these areas.
 - 26 2. Pick several plants that are native to the region and use those plants throughout the Base.
 - 27 3. Develop the maintenance schedule and plans using the Services contract and the 23 May
 28 2008 memorandum from AF/CV.

- 1 4. Develop the Plan to include the following:
 - 2 a. Protect trees from girdling by mowers and hand held weed trimmers. Proper
 - 3 mulching techniques helps reduce weed growth at the base of trees.
 - 4 b. Prune evergreen trees to maintain their natural shape. Lower branches are not to be
 - 5 pruned.
 - 6 c. Trees shall be pruned only during the dormant season such as late winter.
- 7 5. Landscaped beds and trees planted prior to 2008 will be maintained by the Base. Future
- 8 landscape areas will need to be maintained by the building occupants as directed by the 914
- 9 Base Civil Engineer.
- 10 6. Future plantings and landscape designs as requested by Building occupants will need to go
- 11 through the 914 CE for approval. The 914 Environmental Office reviews the landscape
- 12 requests for approval and coordination with the Landscape Management Plan and the
- 13 INRMP.
- 14 • **Monitoring Criteria:** Annually assess the conditions of the Installation's roads and grounds and
- 15 prioritize maintenance activities.

16 4.7.2 GM-2: Integrated Pest Management Plan

- 17 • **Concern:** Niagara Falls ARS produced an updated Integrated Pest Management Plan in 2007.
- 18 The Plan identifies elements of the program such as health and environmental safety; pest
- 19 identification; pest management; and pesticide storage, transportation, use, and disposal. This
- 20 Plan is to be used as a tool to reduce reliance on pesticides, enhance environmental protection
- 21 without negatively affecting the military mission, and maximize use of IPM techniques.
- 22 • **Objective:** Continue to evaluate and update the existing Integrated Pest Management Plan as
- 23 needed.
- 24 • **Actions:**
 - 25 1. The control of nuisance wildlife and the effective elimination of concentrated and diseased
 - 26 populations will be fully implemented.
 - 27 2. Monitor pest and invasive species populations.
 - 28 3. Track usage of active ingredients and man-hours spent controlling pest and invasive species
 - 29 during implementation to ensure that the management strategies are sufficient.
- 30 • **Monitoring Criteria:** Evaluate each eradication measure used to determine its level of success.
- 31 Incremental updates to the Plan will be conducted every 5 years to ensure that the Plan reflects
- 32 changes in pest populations and current management issues.

33 4.7.3 GM-3: Tree Maintenance and Management

- 34 • **Concern:** There are trees and tree branches that are in close proximity to or are touching
- 35 buildings and power lines on the Installation. Management of the trees throughout the
- 36 Installation is essential.
- 37 • **Objective:** An inventory and mapping of hardwood and conifer trees was performed in 2009.
- 38 These should be incorporated into the Grounds Maintenance/Land Management Plan.
- 39 • **Actions:**

- 1 1. A contracted forester or arborist should be made responsible for an annual review of the
2 Installation ornamental tree plantings.
 - 3 2. Maintain the database to catalogue existing trees and provide a schedule for their
4 maintenance. Such a database will be useful in assessing the diversity of urban tree species to
5 gauge the selection of species for future plantings.
 - 6 3. Select replacement trees, which are native to the region and require minimal amounts of
7 maintenance. The replacement trees should also not be preferred by wildlife, especially
8 feeding, roosting and nesting birds.
 - 9 4. Continue to manage trees for disease, damage, and replacement.
- 10 • **Monitoring Criteria:** Ensure that trees are managed in accordance with the goals established in
11 this section. Specific changes to management of tree species should be followed based on annual
12 recommendations made by the consulting arborist/urban forester.

13 4.7.4 GM-4: Eradication of Nonnative and Invasive Plant Species

- 14 • **Concern:** During the 2008 reevaluation of wetland boundaries, purple loosestrife was ubiquitous
15 in some areas. A decreasing trend of this and other invasive species is not as obvious as in
16 previous surveys.
- 17 • **Objective:** Continue with current management techniques, such as mowing and beetles, but
18 additional action should be taken.
- 19 • **Actions:**
 - 20 1. In addition to *Galerucella* beetles, *Hylobius* and *Nanophyes*, should be released. Each
21 species has a different function in reducing loosestrife whether it is feeding on the flowers,
22 roots, or leaves.
 - 23 2. Map the distribution of Japanese knotweed and purple loosestrife on Niagara Falls ARS, as
24 done with *Phragmites* in the 2003-2004 report, to visualize problem areas.
 - 25 3. Remove small stands of *Phragmites*, knotweed, and loosestrife by hand-pulling, as long as
26 the inflorescences are not fully developed.
- 27 • **Monitoring Criteria:** Monitor the effectiveness of new control techniques and revise as
28 necessary.

29 4.8 Outdoor Recreation and Public Access

30 Outdoor recreation activities at Niagara Falls ARS are limited. These activities consist of picnicking and
31 jogging throughout the Installation and use of the exercise track and fitness stations. In addition, two
32 baseball/softball fields are located on the Installation immediately south of the Installation's main gate.
33 Also, the Installation opened Medal of Honor Park in spring 1997, a small park honoring medal recipients
34 who served at Niagara Falls ARS. The Installation also has an airshow that can bring many people onto
35 the Installation during a 3-day period. A summary of the goals used for managing outdoor recreation is
36 presented in **Table 4-10**.

Table 4-10. Summary of Outdoor Recreation Management Goals

Outdoor Recreation Management Goals	
	<ul style="list-style-type: none"> • Provide quality outdoor recreation experiences while sustaining ecosystem integrity. • Ensure that outdoor recreation activities are not in conflict with mission priorities.

The outdoor recreation topics of concern and associated goals and objectives are presented below.

4.8.1 OR-1: Public Access, General Safety, and Security

- **Concern:** The consequences of public access regarding general safety and the operational security of the mission should be evaluated.
- **Objective:** Establish and incorporate a public access protocol as funding allows.
- **Action:**
 1. Create a public access protocol.
- **Monitoring Criteria:** Continually review the public access protocol to ensure that a safe, secure environment compatible with Niagara Falls ARS’s mission is being maintained.

4.9 Surrounding Lands

Off-site land use has the potential to directly affect Niagara Falls ARS plans, programs, and activities. Off-site management by nearby landowners should be considered in the implementation of the management actions identified in this INRMP. Off-site development has the potential to affect the natural resources or mission priorities discussed in this INRMP.

The goal for this section is to manage Niagara Falls ARS on a regional ecosystem-based approach that conserves biodiversity while protecting the operational functionality of the missions of the Installation from natural resources-related infringement. A summary of the goals used for managing surrounding lands is presented in **Table 4-11**.

Table 4-11. Summary of Surrounding Land Goals

Surrounding Land Goals	
	<ul style="list-style-type: none"> • Coordinate with surrounding landowners on the ecosystem-based management of resources and encourage cooperative efforts on adjacent lands that are complementary to the INRMP. • Minimize threats to Niagara Falls ARS assets and natural resources from off-site land use.

The surrounding lands topics of concern and associated goals and objectives are presented below.

4.9.1 SR-1: BASH Awareness

- **Concern:** Conflicting land uses outside the Installation can attract high BASH threat avian

1 species.

- 2 • **Objective:** There are numerous roosting sites for blackbirds and other nuisance avian species
3 immediately adjacent to the Installation. BASH awareness should be maintained with all
4 proposed land use activities.
- 5 • **Action:**
 - 6 1. Nearby facilities and private landowners should be informed of management procedures to
7 lower the BASH threat from migrating and resident raptors, gulls, vultures, and starlings
8 (e.g., the Niagara Falls BFI Landfill, the pond on the adjacent Carborundum property, and
9 nearby agricultural fields).
 - 10 2. Memoranda of Agreements (MOAs) should be drafted to assist private landowners in the
11 removal of these roosting sites.
- 12 • **Monitoring Criteria:** The BASH team should review any habitat alteration to ensure that it does
13 not impact the safety of the flying mission.

14 4.9.2 SR-2: Coordination with NFTA

- 15 • **Concern:** Maintenance of the airport property owned and operated by the NFTA south of the
16 main runway is critical to safety of the flying mission and to the successful implementation of this
17 INRMP.
- 18 • **Objective:** Continue coordination with NFTA to ensure that management and maintenance of
19 the NFTA property south of the main runway is consistent with management objectives of
20 Niagara Falls ARS and this INRMP.
- 21 • **Action:**
 - 22 1. Develop a MOA/Memorandum of Understanding (MOU) with the NFTA to ensure proper
23 maintenance of the runway infield areas.
 - 24 2. Consideration should be given to expanding grounds maintenance contract to cover a portion
25 of the NFTA-controlled areas.
- 26 • **Monitoring Criteria:** Ensure that maintenance of the NFTA property is consistent with
27 management objectives of this INRMP.

28 4.10 Geographic Information Systems

29 GIS is a computer system for capturing, storing, checking, integrating, manipulating, analyzing, and
30 displaying data related to positions on the Earth's surface. GIS is used to create information layers used
31 to develop and manipulate maps. GIS data are represented as different layers each containing data on a
32 particular kind of feature (e.g., soils, wetlands, roads). Each feature is linked to a position on the
33 graphical image of a map. The data layers are organized to create maps and to perform statistical
34 analysis.

35 NFARS has an on-site GIS point of contact and Command GIS support database development and
36 maintenance and training. GIS provides support for the entire environmental program as well as the
37 training community. Niagara Falls ARS will utilize GIS for complex analyses such as project siting, data
38 interpolations, and risk assessments.

39 GIS software enables staff to capture, store, update, manipulate, analyze, and display all forms of

1 geographically referenced data and tabular information about Niagara Falls ARS. GIS databases can be
 2 used for projects such as the following:

- 3 • Providing maps
- 4 • Selecting suitable areas for construction activities
- 5 • Planning land rehabilitation projects
- 6 • Providing special maps for Environmental Awareness materials
- 7 • Ensuring avoidance of cultural resources during ground-disturbing projects
- 8 • Ensuring avoidance of rare species habitats and other areas of special concern during construction
 9 projects
- 10 • Identifying site options for use during NEPA evaluation of alternative sites
- 11 • Calculating drainages and water flows
- 12 • Determining neotropical bird habitat preferences.

13 The goals related to GIS management are summarized in **Table 4-12**.

14 **Table 4-12. Summary of GIS Management Goals**

GIS Management Goals
<ul style="list-style-type: none"> • Collect, store, and maintain data about historical conditions, trends, and current status for critical indicators of ecological integrity and sustainability. • Use GIS information as benchmarks for developing future natural resources management goals and objectives. • Train, as necessary, the personnel responsible for the maintenance of environmental data.

15 The GIS topics of concern and associated goals and objectives are presented below.

16 **4.10.1 GIS-1: GIS as a Natural Resources Management Tool**

- 17 • **Concern:** Historic and current sightings/locations of T&E species at NFARS are not available in
 18 GIS format.
- 19 • **Objective:** Historic and current locations for protected species and habitat should be continually
 20 updated in GIS in order to identify hot-spots or preferred habitat for protected species at NFARS.
- 21 • **Action:**
 - 22 1. Develop GIS to allow for integrated presentation of management alternatives.
 - 23 2. Use GIS information to develop future natural resources management goals and objectives.
- 24 • **Monitoring Criteria:** Develop an annual report that clearly states the condition and trends
 25 within Niagara Falls ARS.

1 **4.11 Natural Resources Constraints to Installation Planning and Mission**

2 Some of the natural resources topics of concern mentioned in the previous sections could negatively
3 impact the Installation’s flying mission or future planning operations. The potential negative impacts
4 could range from delaying the construction of new buildings to loss of life resulting from severely
5 damaged aircraft. These issues should be identified and a schedule for their resolution should be
6 prepared. The topics of concern involving natural resources constraints to Installation planning and
7 mission are presented below.

8 **Ecosystem Management**

- 9 • Niagara Falls ARS personnel are unaware and currently lack the appropriate guidance on an
10 ecosystem management approach to natural resources management.
- 11 • In order to establish ecosystem management goals, it is necessary to prioritize stressors on the
12 ecological system and specific management actions.

13 **Fish and Wildlife Management**

- 14 • Bird aircraft strikes have occurred and have been reported at the Installation.
- 15 • Current fenceline maintenance should continue to prevent or reduce the free entry of wildlife and
16 domestic animals onto the Installation.

17 **Threatened or Endangered Species**

- 18 • Early spring and year-round bird surveys are necessary to elucidate state-listed bird species
19 occurrence and behavior at Niagara Falls ARS.
- 20 • USFWS developed a list to include New York State species that can be found on the Niagara
21 Falls ARS or the surrounding region. Surveys for these species have not been conducted.

22 **Habitat Management**

- 23 • Although the vegetative communities previously identified have not changed significantly over
24 the years, the plants identified within the communities might have changed.
- 25 • The current wildlife habitat on Niagara Falls ARS is predominantly grass and wetland, both
26 which have the potential to attract wildlife.
- 27 • Nonnative and invasive species could be endangering populations of native species and creating
28 lower quality habitat available for wildlife.

29 **Wetlands and Floodplains**

- 30 • A wetland boundary reassessment every 5 years is recommended by the USACE; therefore, the
31 next reevaluation should take place in 2013.
- 32 • Encroachment into wetland areas could be necessary in the future as a result of construction or
33 military training activities.
- 34 • Niagara Falls ARS does not have a current management plan for the conservation of the
35 Installation’s wetlands resources.

36 **Watershed Management**

- 37 • Past analyses were unable to identify the source of contaminants in Cayuga Creek.

1 **Grounds Maintenance**

- 2 • The majority of the acreage at Niagara Falls ARS is improved or semi-improved space and thus
3 receives intensive maintenance.
- 4 • Continue to implement the Integrated Pest Management Plan. This Plan is to be used as a tool to
5 reduce reliance on pesticides, enhance environmental protection without negatively affecting the
6 military mission, and maximize use of IPM techniques.
- 7 • There are trees and tree branches that are in close proximity to or are touching buildings and
8 power lines on the Installation.
- 9 • During the 2008 reevaluation of wetland boundaries, purple loosestrife was ubiquitous in some
10 areas.

11 **Outdoor Recreation**

- 12 • The consequences of public access regarding general safety and the operational security of the
13 mission should be evaluated.

14 **Surrounding Lands**

- 15 • Conflicting land uses outside the Installation can attract high BASH threat avian species.
- 16 • Maintenance of the airport property owned and operated by the NFTA south of the main runway
17 is critical to safety of the flying mission and to the successful implementation of this INRMP.

18 **Geographic Information Systems**

- 19 • Historic and current sightings/locations of T&E species at NFARS are not available in GIS
20 format.

5. INRMP Implementation

The purpose of this section is to present a road map for the implementation of specific management goals and objectives for several natural resources subject areas. **Table 5-1** summarizes the management actions identified in **Sections 4.1** through **4.10** and proposes priorities for their implementation. The taskings proposed for this INRMP are extremely aggressive, and might not be accomplished within the established timelines due to a number of factors (e.g., budget and manpower constraints, wartime taskings). However, their importance to the proper management of Niagara Falls ARS's natural resources cannot be understated. Therefore, the management actions presented in **Table 5-1** should be modified as part of the annual review of this INRMP by the INRMP Working Group to ensure that these taskings are continually emphasized and accomplished when practicable. Additional space has been provided under each resource area heading to allow for the addition of management actions developed during the lifecycle of this INRMP.

The Office of Management and Budget considers funding for the preparation and implementation of this INRMP, as required by the Sikes Act, and the associated NEPA analysis and documentation to be a high priority. However, the reality is that not all of the projects and programs identified in this INRMP will receive immediate funding. As such, these programs and projects have been placed into three priority-based categories: (1) high-priority projects, (2) important projects, and (3) projects of lesser importance. The prioritization of the projects is based on need, and need is based on a project's importance in moving the natural resources management program closer towards successfully achieving its goal.

This INRMP reflects the commitment set forth by Niagara Falls ARS to conserve, protect, and enhance the natural resources present on Niagara Falls ARS, while protecting the operational functionality of NFARS' mission. This INRMP is the final Plan that will direct natural resources management at Niagara Falls ARS beginning FY 2013 and ending FY 2017. An ecosystem approach was used to develop the management measures for each resource area. Implementation of the management measures will maintain, conserve, and enhance the ecological integrity of Niagara Falls ARS and the biological communities inhabiting, or occurring, on the Installation. In addition, the natural resources management measures described in this INRMP will protect Niagara Falls ARS ecosystems and their components from unacceptable damage or degradation, and identify and restore previously degraded habitats.

Natural resources and land use management issues are not the only factors contributing to the development and implementation of the INRMP. Installation management and other seemingly unrelated issues affect the implementation of this INRMP. It is of utmost primacy to the implementation of this INRMP that Niagara Falls ARS personnel take "ownership" of the Plan (i.e., individual or organizational primary responsibility to implement the INRMP), to provide the necessary resources (i.e., personnel and equipment), and to allocate the appropriate funding to enact the Plan. It is extremely important that an INRMP Working Group be established to aid in the continued development and commit to the implementation of this INRMP. The INRMP Working Group should be made up of key Installation personnel, and should assume an oversight role to ensure the effective implementation of this INRMP. Top- and middle-level management representation would provide the INRMP Working Group with the leadership and structure necessary for the successful implementation of this INRMP.

As stated in **Section 1.4**, this INRMP is a "living" document that is based on several short-, medium-, and long-range planning goals. Short-range goals include activities that are planned to occur in 0 to 5 years, while medium-range goals include activities in a 6- to 10-year period. Long-range goals are usually scheduled beyond 10 years. A majority of the goals and objectives discussed in this INRMP are based on short-term natural resources management goals. Because this INRMP is a "living" document, goals can be revised over time to reflect evolving environmental conditions. In addition, medium- and long-range planning goals could eventually become short-range activities that also require implementation.

Table 5-1. Summary of the Niagara Falls ARS Natural Resources Management Actions

Priority ^a	Task (Management Goal)/[HRS]	Years					Notes
		2012	2013	2014	2015	2016	
Ecosystem Management Actions							
(2)	Include ecosystem management justification in directions provided by the Environmental Office (ECO-1). [40 hours]						
(2)	Develop and distribute educational materials that describe ecosystem management, natural resources, and operational policies to NFARS personnel with potential to make decisions about activities that impact natural resources (ECO-1). [100 hours]						
(1)	Develop a tool that evaluates the stressors on ecosystem health (ECO-2). [40 hours]						
Fish and Wildlife Management Actions							
(2)	Continue the authorized taking of nuisance species to lessen the danger of bird/wildlife strikes with aircraft (FWM-1). [120 hours]						
(2)	Develop a vegetative management strategy to minimize wildlife threat; seasonal inspection requirements for grain-type grasses that attract high-threat avian species (FWM-1). [40 hours]						
(2)	Continue to control food sources for nuisance avian species adjacent to the airfield; periodic inspection requirements for ponding and proper drainage on the airfield whenever possible to reduce insect breeding (FWM-1). [40 hours]						
(2)	Implement the management recommendations developed by the USDA to the greatest extent possible (FWM-2). [40 hours]						

Priority ^a	Task (Management Goal)/[HRS]	Years					Notes
		2012	2013	2014	2015	2016	
(2)	Adhere to and aggressively implement the protocols to remove nuisance wildlife detailed in the BASH Plan (FWM-2). [40 hours]						
(2)	Conduct surveys to determine the locations of the perimeter fence breaches (FWM-3). [40 hours]						
(2)	Prepare a maintenance schedule for the perimeter fenceline (FWM-2). [40 hours]						
(2)	Make repairs to perimeter fences where saplings have lifted fences (FWM-2). [40 hours]						
Threatened and Endangered Species Management Actions							
(1)	Conduct early spring grassland breeding bird AND year-round dawn-dusk bird surveys to determine occurrence and behavior of the listed species on the Installation (TE-1 and 2). [120 hours]						
(1)	Incorporate the results of the early spring grassland breeding bird AND year-round dawn-dusk bird survey results into the T&E Management Plan (TE-1 and 2). [40 hours]						
(1)	Develop a state-listed Species Survey and Report with a focus on the listed species with a potential to occur on the Installation and report the presence to Natural Heritage (TE-3). [80 hours]						
(1)	Expand fish surveys beyond the Installation if necessary to determine potential for their occurrence on Niagara Falls ARS (TE-3). [40 hours]						
Habitat Management Actions							
(2)	Remap the vegetative communities previously identified on the Installation (HM-1). [80 hours]						

Priority ^a	Task (Management Goal)/[HRS]	Years					Notes
		2012	2013	2014	2015	2016	
(2)	Provide an updated inventory of all plant species encountered within the communities (HM-1). [40 hours]						
(1)	Maintain ditches and creeks (keeping them narrow and deep) to discourage aquatic vegetation; remove as much aquatic vegetation from waterway as possible (HM-2). [80 hours]						
(1)	Remove brush and trees on the infield to reduce prey habitat and movement corridors for mammalian predators (HM-2). [40 hours]						
(1)	Continue with aggressive and persistent harassment of birds on the airfield including those within the streams and drainages (HM-2). [40 hours]						
(1)	Identify areas where nonnative and invasive species occur and develop specific management actions to target the populations of these species (HM-3). [80 hours]						
(1)	Generate a Nonnative and Invasive Species Plan and include it as an OCP to this INRMP once it has been completed (HM-3). [80 hours]						
(1)	Coordinate with state and local regulators to obtain appropriate permits for nonnative and invasive plant species eradication in wetland areas (HM-3). [40 hours]						
Wetlands and Floodplain Management Actions							
(1)	Reevaluate the wetlands boundaries identified on the Installation every 5 years, and update Installation wetlands map with locations of new wetlands (WT-1). [40 hours]						
(1)	Incorporate BMPs into necessary military operations in and around wetlands (WT-1). [20 hours]						

Priority ^a	Task (Management Goal)/[HRS]	Years					Notes
		2012	2013	2014	2015	2016	
(1)	Obtain appropriate permits prior to encroachments into the wetland areas to remain in compliance with the provisions of the CWA [WT-2]. [20 hours]						
(2)	Instruct personnel, conducting military training activities near or adjacent to wetlands, on the location and extent of these wetland areas to minimize any potential impacts [WT-2]. [40 hours]						
(1)	Implement adaptive management strategies for the conservation and enhancement of the Installation's wetlands resources without negatively affecting the military mission (WT-3). [80 hours]						
(2)	Update the grounds maintenance contract to include language concerning location of and special maintenance requirements for Federal and state wetland areas (WT-3). [40 hours]						
Watershed Management Actions							
(2)	Expand PISCES study to include additional Cayuga Creek sites further downstream as well as additional sites in outfalls #6, #7, and #8 drainage ditches (WM-1). [80 hours]						
(1)	Continue to monitor in-flow points to determine if contaminated storm water flows onto the Installation (WM-1). [100 hours]						
(1)	Identify nonpoint sources of pollutants and implement control measures (WM-1). [40 hours]						
(1)	Utilize data obtained from these assessments to determine if an examination of surrounding land uses is needed to identify likely sources of point or nonpoint nutrient loading (WM-1). [40 hours]						
Grounds Maintenance and Land Management Actions							

Priority ^a	Task (Management Goal)/[HRS]	Years					Notes
		2012	2013	2014	2015	2016	
(2)	Develop a Comprehensive Landscape Management Plan and include the Plan as an OCP in this INRMP (GM-1). [120 hours]						
(2)	Develop an Installation improvement schedule that will include the use of native plant species identified in the Landscape Management Plan (GM-1). [40 hours]						
(2)	Create a list of “preferred” plant species (GM-1). [40 hours]						
(1)	Continue implementation of the control of wildlife and the effective elimination of concentrated and diseased populations in accordance with the IPM (GM-2). [40 hours]						
(1)	Monitor pest and invasive species populations (GM-2). [40 hours]						
(1)	Track usage of active ingredients and man-hours spent controlling pest and invasive species during implementation to ensure that the management strategies are sufficient (GM-2). [40 hours]						
(2)	Contract a forester or arborist to conduct an annual review of the Installation ornamental tree plantings (GM-3). [40 hours]						
(2)	Develop and maintain a database to catalogue existing trees and provide a schedule for their maintenance (GM-3). [80 hours]						
(2)	Select replacement trees that are native to the region and require minimal amounts of maintenance (GM-3). [40 hours]						
(2)	Continue to manage trees for disease, damage, and replacement (GM-3). [40 hours]						

Priority ^a	Task (Management Goal)/[HRS]	Years					Notes
		2012	2013	2014	2015	2016	
(2)	In addition to <i>Galerucella</i> beetles, <i>Hylobius</i> and <i>Nanophyes</i> should be released for control of purple loosestrife (GM-4). [40 hours]						
(2)	Map the distribution of Japanese knotweed and purple loosestrife on the Installation, as done with <i>Phragmites</i> in the 2003-2004 report, to visualize problem areas (GM-4). [40 hours]						
(2)	Remove small stands of <i>Phragmites</i> , knotweed, and loosestrife by hand-pulling, when inflorescences are not fully developed to minimize spread of seeds (GM-4). [80 hours]						
Outdoor Recreation Management Actions							
(1)	Create a public access protocol (OR-1). [80 hours]						
Surrounding Lands Management Actions							
(2)	Inform nearby facilities and private landowners of management procedures to lower the BASH threat from migrating and resident raptors, gulls, vultures, and starlings (SR-1). [40 hours]						
(2)	Draft MOAs to assist private landowners in the removal of roosting sites for blackbirds and other nuisance avian species immediately adjacent to the Installation (SR-1). [40 hours]						
(2)	Develop a MOA/ MOU with the NFTA to ensure that management and maintenance of the NFTA property south of the main runway is consistent with management objectives of Niagara Falls ARS and this INRMP. (SR-2). [40 hours]						
(2)	Consider and evaluate the potential for expanding the grounds maintenance contract to cover a portion of the NFTA-controlled areas (SR-2). [40 hours]						

Priority ^a	Task (Management Goal)/[HRS]	Years					Notes
		2012	2013	2014	2015	2016	
GIS Management Actions							
(2)	Define how GIS should be used by Natural Resources staff (GIS-1). [40 hours]						
(2)	Develop GIS to allow for integrated presentation of management alternatives (GIS-1). [80 hours]						

Note:

a. Priority—(1) High Priority Projects; (2) Important Projects; and (3) Projects of Lesser Importance.

1 Currently, Niagara Falls ARS personnel are responsible for implementing programs at the Installation
 2 other than the natural resources management responsibilities that will be necessary to implement this
 3 INRMP. Additional sources of temporary labor, hired with term limitations, could be utilized to augment
 4 current staff, such as seasonal employees (e.g., grounds maintenance summer hires). Outside agency
 5 reimbursable hires and guardsman, reservists, or active-duty USAF personnel assigned to Niagara Falls
 6 ARS on temporary duty are another source of supplemental labor. Implementation of a number of
 7 projects discussed in this INRMP will require active outside assistance. The outside assistance could
 8 come from state and Federal agencies, private consortiums and organizations, universities, and
 9 contractors. Using these resources is the most efficient and cost-effective method for acquiring expertise
 10 on a temporary basis. Some parties will be reimbursed for their assistance, as agreed based on the MOU
 11 and contractual agreements, whereas others will supply their assistance in accordance with cooperative
 12 agreements. The INRMP Working Group should assess the level of additional resources necessary to
 13 fully implement this Plan during the INRMP annual review process, and determine the extent to which
 14 outside assistance will be required.

15 **Table 5-2. Estimated Total Oversight Man-Hours of Implementing INRMP**

INRMP Funding Category	Oversight Estimated Man Hours
Ecosystem Management	180
Fish and Wildlife Management	580
Threatened and Endangered Species	480
Habitat Management	480
Wetlands and Floodplains	320
Watershed Management	420
Grounds Maintenance	680
Outdoor Recreation	80
Surrounding Lands	160
Geographical Information System	120
TOTAL	3,580

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6. Environmental Assessment and Consequences

This section of the document assesses known, potential, and reasonably foreseeable environmental consequences related to implementing the INRMP and managing natural resources at Niagara Falls ARS, New York. **Section 6.1** addresses implementation of the No Action Alternative that reflects the continuation of existing baseline conditions as described in **Sections 3** through **5**. **Section 6.2** presents potential effects in the context of the scope of the Proposed Action and in consideration of the affected environment. This assessment presents resource areas adapted from the resources described in **Sections 3, 4, and 5**, and resource areas requiring assessment pursuant to the EIAP (32 CFR Part 989) and AFI 32-7061, *Environmental Impact Analysis Process* (i.e., socioeconomics and environmental justice). It also considers implementation of the selected management measures in their entirety (as presented in **Sections 4 and 5**). Cumulative effects are discussed in **Section 6.3**. Implementation of the INRMP (i.e., the Proposed Action) is the preferred alternative. A summary of the potential environmental consequences associated with the No Action Alternative and the Proposed Action is also presented in **Section 6.3**.

Other management alternatives were considered during the screening process but were eliminated (such as managing natural resources on the Installation without a written management plan, managing some of the natural resources but not all that exist on the Installation, not recognizing the relationship between different natural resources and the mission in natural resources management, or natural resources management actions that adversely affect the mission [e.g., ceasing air operations during the bird breeding season, preclusion of any additional infrastructure or building development on the Installation to preserve the remaining open space, etc.]). These management alternatives were not economically feasible, ecologically sound, or compatible with the requirements of the military mission. **Section 4** provides a description of the goals and objectives used to develop management measures for each resource area's issues and concerns and the rationale for why certain management measures were selected. Therefore, the analytical framework supporting each resource area is not repeated in this section.

As discussed in **Section 1.4**, the Niagara Falls ARS INRMP is a "living" document that focuses on a 5-year planning period based on past and present actions. Short-term management practices included in the Plan have been developed without compromising long-range goals and objectives. Because the Plan will be modified over time, additional environmental analyses might be required as new management measures are developed for the long-term (i.e., beyond 5 years).

6.1 No Action Alternative

Adoption of the No Action Alternative would mean that Niagara Falls ARS's INRMP would not be implemented and current natural resources management practices would continue "as is." Existing conditions and management practices would continue and no new initiatives would be established.

Potential consequences associated with the No Action Alternative are discussed in this section for each resource area. **Section 6.3** summarizes the analysis of potential consequences for the No Action Alternative and compares them to the Proposed Action. As shown, no significant or adverse effects would be expected. Under the No Action Alternative, the environmental conditions at Niagara Falls ARS would not benefit from the management measures associated with implementing the proposed INRMP.

Expected consequences of the No Action Alternative for each resource area are presented in the following paragraphs:

1 *Environmental Setting*—Minor adverse effects on the general environmental conditions of Niagara Falls
2 ARS would be expected under the no action alternative. Without a formal plan of action to manage the
3 natural resources at Niagara Falls ARS, certain resources would continue to be vulnerable to degradation.

4 *Climate*—No effects on climate would be expected.

5 *Air Quality*—No effects would be expected. Potential effects on existing pollutant emissions are
6 precluded by the fact that current natural resources management actions do not involve activities that
7 would contribute to changes in existing air quality. Therefore, there would be no effects regarding air
8 quality as a result of implementation of the no action alternative.

9 *Noise*—No effects would be expected. The primary concern regarding noise and potential environmental
10 effects pertains to increases in sound levels, exceedances of acceptable land use compatibility guidelines,
11 and changes in public acceptance (i.e., noise complaints). Potential effects are precluded by the fact that
12 current natural resources management actions do not involve activities that would affect noise conditions.
13 Existing noise levels would not change. Therefore, there would be no effects regarding noise levels or
14 sound quality as a result of implementation of the no action alternative.

15 *Topography*—Minor adverse effects would be expected. By failing to implement an effective soil erosion
16 and sedimentation program, impacts on topography associated with erosion and sedimentation on Niagara
17 Falls ARS would be expected to continue.

18 *Geology*—Minor adverse effects would be expected. By failing to implement an effective soil erosion
19 and sedimentation program, impacts on geologic resources associated with erosion and sedimentation on
20 Niagara Falls ARS would be expected to continue.

21 *Soils*—Minor adverse effects would be expected. By failing to implement an effective soil erosion and
22 sedimentation program, impacts on soils associated with erosion and sedimentation on Niagara Falls ARS
23 would be expected to continue. The no action alternative does not include the implementation of soil
24 conservation measures, or a plan of action to prevent or minimize potential soil problems related to
25 erosion and sedimentation before their occurrence. Implementation of the no action alternative would
26 involve reactive management to problems after their occurrence, rather than on managing the resource to
27 prevent impacts.

28 *Water Resources*—Minor adverse effects would be expected to continue. The no action alternative does
29 not provide a formal plan of action for monitoring and protecting the water resources at Niagara Falls
30 ARS. The water resources are vulnerable to degradation without the implementation of a formal plan of
31 action that includes watershed protection measures, nonpoint source pollution controls, and a
32 comprehensive monitoring program designed to identify water quality problems at their onset.

33 *Wetlands*—Minor adverse effects could occur. The no action alternative does not provide a formal plan
34 for evaluating and monitoring wetlands habitat conditions. Nor does it establish formal protection
35 measures to prevent or minimize potential impacts that could result from training and other mission-
36 related activities.

37 *Floodplains*—No effects would be expected.

38 *Aquatic Habitat*—Minor adverse effects would be expected to continue. The no action alternative does
39 not provide for the formal implementation of a routine habitat assessment and monitoring program.
40 Implementation of such a program not only provides a method for protecting these habitats, but also
41 provides a baseline of data that can be used to prioritize stream restoration projects and identify the most

1 efficient allocation of resources. In addition, the no action alternative does not establish routine
2 management measures to protect and enhance these habitats by preventing or minimizing potential
3 impacts.

4 *Riparian Habitat*—Minor adverse effects would be expected to continue. As with aquatic habitats, the no
5 action alternative does not provide for the implementation of a routine assessment and monitoring
6 program to protect these habitats. In addition, the no action alternative does not establish limited-use
7 riparian buffers to protect water quality by reducing nonpoint source impacts associated with runoff and
8 adjacent land uses, nor does it establish a formal set of management measures to protect and enhance
9 these habitats by preventing or minimizing potential impacts resulting from training and other mission-
10 related activities.

11 *Terrestrial Ecosystems*—Minor adverse effects would be expected to continue. Under the no action
12 alternative, there would be no formal plan of action to conserve terrestrial habitat conditions and
13 diversity, resulting in a continued challenge for Niagara Falls ARS to achieve their objective of providing
14 benefits to wildlife species and to maintain or improve overall biodiversity. Under the no action
15 alternative, there would be no coordinated effort or plan to create or maintain the quality of habitat
16 attractive to or required by a diverse population of wildlife that are compatible with the flying mission.

17 *Fauna*—Minor adverse effects would be expected to continue. Under the no action alternative, the health
18 and condition of the wildlife populations would not be improved and management measures to increase
19 the abundance and biodiversity of wildlife at Niagara Falls ARS would not be implemented. In addition,
20 management measures designed to protect and enhance wildlife habitats (i.e., aquatic, riparian, wetlands,
21 terrestrial) would not be implemented, thereby resulting in a continuing decline in the quality and
22 complexity of the habitats. Decline in habitat quality and complexity would continue to adversely affect
23 wildlife and biodiversity.

24 *Endangered, Threatened, and Rare Species*—Minor adverse effects would be expected to continue for
25 special status species not protected under the ESA. The no action alternative does not provide special
26 measures for the protection and management of these species or future nesting activity that might occur.
27 Implementation of the no action alternative would continue to leave these species vulnerable to potential
28 impacts that could adversely affect their existence on Niagara Falls ARS.

29 *Land Use*—No effects would be expected. Under the no action alternative, no changes to onsite land uses
30 or land use patterns would occur. Because land uses would not be expected to change on the base, land
31 use patterns in the surrounding area would not be affected.

32 *Facilities*—No effects would be expected. All facilities would continue to be maintained and operated in
33 accordance with required permits and capabilities of the systems. The demand for utilities and roads
34 would not be expected to change. Therefore, no effects on existing facilities would be expected under the
35 no action alternative.

36 *Hazardous and Toxic Materials*—No effects would be expected. Hazardous and toxic materials would
37 continue to be handled in accordance with Federal laws and AFIs, including the *Resource Conservation*
38 *and Recovery Act* (RCRA); the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA); the *Toxic*
39 *Substances Control Act*; and AFI 32-4002, *Hazardous Material Emergency Planning and Response*
40 *Program*. Therefore, no adverse effects regarding the generation of hazardous and toxic materials would
41 be expected under the no action alternative.

42 In summary, the analysis of existing (i.e., baseline) conditions identifies no significant adverse
43 environmental concerns for the conservation, management, or restoration of natural resources at Niagara

1 Falls ARS. But, current natural resources management conflicts with Niagara Falls ARS's underlying
2 need to train personnel in a realistic natural setting while simultaneously meeting mission requirements
3 and complying with environmental regulations and policies over time. In addition, the absence of a
4 formal set of updated management measures consistent with current conditions and management needs at
5 Niagara Falls ARS inhibits the ability of the Installations to adequately engage in future planning
6 initiatives. It also does not capture benefits derived from identifying and executing comprehensive,
7 integrated environmental and natural resources management strategies that might be implemented over
8 the long term. Therefore, implementation of the no action alternative is not the preferred alternative.

9 6.2 Proposed Action (Preferred Alternative)

10 Potential consequences associated with the Proposed Action are discussed in this section for each
11 resource area described in **Section 6**. **Section 6.3** summarizes the analysis of potential consequences for
12 the Proposed Action and compares them to the no action alternative (i.e., baseline or existing conditions).
13 Potential environmental consequences associated with implementation of the INRMP would result in
14 either no effects or beneficial effects for each resource area. Compared to the no action alternative,
15 environmental conditions at Niagara Falls ARS would improve as a result of implementing the proposed
16 INRMP. Therefore, implementing the INRMP (i.e., the Proposed Action) is the preferred alternative.

17 The potential effects that would be expected as a result of implementation of the Proposed Action for
18 each resource area are presented in the following paragraphs:

19 *Environmental Setting*—Beneficial effects on the general environmental conditions of Niagara Falls ARS
20 would be expected from implementation of the Proposed Action. Implementation of the Proposed Action
21 would have beneficial effects for many of Niagara Falls ARS's natural resources, which would result in
22 overall improvement of the environmental setting.

23 *Climate*—No effects on climate would be expected.

24 *Air Quality*—No effects would be expected. The primary concern regarding air quality and potential
25 environmental effects pertains to increases in pollutant emissions; exceedance of NAAQS and other
26 Federal, state, and local limits; and impacts on existing air permits. Examples of activities that would
27 result in potential adverse changes in air quality conditions include changes in military equipment,
28 increases in the number or location of personnel, construction of new facilities or modification of existing
29 facilities, or increase or change in military operations. However, potential effects on existing pollutant
30 emissions are precluded by the fact that the Proposed Action does not involve activities that would
31 contribute to changes in existing air quality conditions. Therefore, there would be no effects on air
32 quality as a result of implementing the Proposed Action.

33 *Noise*—No effects would be expected. The primary concern regarding noise and potential environmental
34 effects pertains to increases in sound levels, exceedances of acceptable land use compatibility guidelines,
35 and changes in public acceptance (i.e., noise complaints). However, potential effects are precluded by the
36 fact that the Proposed Action does not involve activities that would impact noise conditions, such as
37 changes in military equipment (especially aircraft), increase in the number or location of personnel,
38 construction of new facilities or modification of existing facilities, or increase or change in military
39 operations. Therefore, there would be no effects on noise levels or sound quality as a result of
40 implementing the Proposed Action.

41 *Topography*—Beneficial effects would be expected. By implementing an effective soil erosion and
42 sedimentation program, impacts on topography associated with erosion and sedimentation at Niagara
43 Falls ARS would be minimized.

1 *Geology*—Beneficial effects would be expected. By implementing an effective soil erosion and
2 sedimentation program, impacts on geologic resources associated with erosion and sedimentation on
3 Niagara Falls ARS would be minimized.

4 *Soils*—Beneficial effects would be expected. By implementing an effective soil erosion and
5 sedimentation program, impacts on soils associated with erosion and sedimentation on Niagara Falls ARS
6 would be minimized. As part of the Proposed Action, existing sites where erosion has been determined to
7 be a problem would be addressed. In addition, monitoring of soil conditions on the Installation to identify
8 potential problem areas, the implementation of conservation measures in areas where exposure of soils is
9 necessary and, when possible, the avoidance of activities likely to result in erosion would minimize
10 potential impacts on the soil resources and result in a reduction in erosion at Niagara Falls ARS.

11 *Water Resources*—Beneficial effects would be expected. The establishment of riparian buffers would
12 result in beneficial effects on water quality on Niagara Falls ARS by reducing nonpoint source impacts
13 associated with runoff and adjacent land uses. Efforts to limit impacts on water bodies and riparian areas
14 would reduce the potential for water quality degradation both on and downstream of the Installation.
15 Proper application of turf management chemicals, fungicides, and insecticides would minimize the
16 potential impacts on water bodies associated with the use of these chemicals at Niagara Falls ARS.

17 *Wetlands*—Beneficial effects would be expected. Implementation of the Proposed Action would protect
18 wetlands by providing a basis to evaluate and monitor habitat conditions through the continuing
19 development of the wetlands database for Niagara Falls ARS. The establishment of buffers and the
20 maintenance of existing buffers would minimize potential impacts on wetlands associated with adjacent
21 activities. Additional efforts would be made to reduce impacts on wetlands by planning mission
22 activities, when possible, in a manner consistent with wetlands protection objectives. Where current
23 activities are impacting wetlands functions, efforts would be made to identify the type and source of
24 impacts and, where applicable, restoration of affected habitats would be implemented.

25 *Floodplains*—No effects would be expected.

26 *Aquatic Habitat*—Beneficial effects would be expected. The assessment of aquatic habitats at Niagara
27 Falls ARS would provide a basis to develop a management program that would both protect and enhance
28 these habitats without negatively affecting the military mission. Assessment of aquatic habitats at
29 Niagara Falls ARS also would provide a baseline that could be used in tracking conditions and trends of
30 these habitats, which would allow management practices to be applied where and when needed. The
31 establishment of limited-use buffers around water bodies would provide protection to habitats both in and
32 adjacent to the resource. Where impacts on aquatic habitats occur because of mission activities,
33 management objectives provide for the timely mitigation of the impacts.

34 *Riparian Habitat*—Beneficial effects would be expected. The assessment of riparian habitats at Niagara
35 Falls ARS would provide a basis to develop a management program that would both protect and enhance
36 these habitats without negatively affecting the military mission. Assessment of riparian habitats at
37 Niagara Falls ARS also would provide a baseline that can be used in tracking conditions and trends of
38 these habitats, which would allow management practices to be applied where and when needed. The
39 establishment of limited-use riparian buffers would result in beneficial effects on water quality at Niagara
40 Falls ARS by reducing nonpoint source impacts associated with runoff and adjacent land uses.

41 *Terrestrial Ecosystems*—Beneficial effects would be expected. From the perspective of habitat,
42 implementation of the Proposed Action would result in improved terrestrial habitat conditions for wildlife
43 because maintaining a high level of habitat diversity in areas of the base that do not conflict with the
44 flying mission is a priority of the INRMP.

1 *Fauna*—Beneficial effects on game and nongame species would be expected. Implementation of the
2 Proposed Action would result in several open grassland prairie conservation areas, and improved habitat
3 for small game and nongame species.

4 *Endangered, Threatened, and Rare Species*—Beneficial effects on all special status species at Niagara
5 Falls ARS would be expected. Implementation of the Proposed Action would provide protection and
6 management for species not protected under the ESA, as well as for species, which are federally listed but
7 not known to nest or den on the Installation. Also, under the Proposed Action, rare flora and fauna would
8 be treated with added importance and valued for their contribution to the unique natural heritage of
9 Niagara Falls ARS.

10 *Land Use*—Beneficial impacts would be expected. Under the Proposed Action, greater guidance on the
11 overall land use management objective would be afforded.

12 *Facilities*—No effects would be expected. Facilities would continue to be maintained and operated in
13 accordance with required permits and capabilities of the systems. Under the Proposed Action, the
14 demand for utilities and roads would not be expected to increase and, therefore, impacts on existing
15 facilities would not be expected.

16 *Hazardous and Toxic Materials*—No effects would be expected. Hazardous and toxic materials would
17 continue to be handled in accordance with Federal laws and AFIs, including the RCRA, FIFRA, TSCA,
18 and AFI 32-4002. Thus, no adverse effects regarding the generation of hazardous and toxic materials
19 would be expected under the Proposed Action.

20 These findings are consistent with the goals of the natural resources management program to maintain
21 ecosystem viability and ensure the sustainability of desired military training conditions; to maintain,
22 protect and improve ecological integrity; to protect and enhance biological communities without
23 negatively affecting the military mission, particularly sensitive, rare, threatened, and endangered species;
24 to protect the ecosystems and their components from damage or degradation; and to identify and restore
25 degraded habitats. The nature of the management measures recommended by the INRMP, if
26 implemented, would directly and positively affect the health and condition of natural resources at Niagara
27 Falls ARS.

28 6.3 Cumulative Effects

29 A cumulative effect is defined as an effect on the environment that results from the incremental effect of
30 the action when added to other past, present, and reasonably foreseeable future actions regardless of what
31 agency or person undertakes such other actions. Cumulative effects can result from individually minor
32 but collectively significant actions taking place locally or regionally over a period of time.

33 Implementation of the INRMP would result in a comprehensive natural resources management strategy
34 for Niagara Falls ARS that represents compliance, restoration, prevention, and conservation; improves the
35 existing management approach for natural resources on the Installation; and meets legal and policy
36 requirements consistent with national natural resources management philosophies. Implementation would
37 be expected initially to improve existing environmental conditions at Niagara Falls ARS, as shown by the
38 potential for beneficial effects in **Table 6-1** and as described in **Section 6.2**. Over time, adoption of the
39 Proposed Action would enable Niagara Falls ARS to achieve their goal of maintaining ecosystem
40 viability and ensuring sustainability of desired military training conditions.

41 Although growth and development can be expected to continue outside of Niagara Falls ARS and within
42 the surrounding natural areas, cumulative adverse effects on these resources would not be expected when

1 added to the effects of activities associated with the proposed management measures contained in the
 2 INRMP. Implementation of the management measures proposed in the INRMP would be expected to
 3 result in minor beneficial cumulative effects.

4 **Table 6-1. Summary of Potential Environmental Consequences**

Resource Area/Environmental Condition *	Environmental Consequence	
	No Action Alternative	Proposed Action
Environmental Setting	Minor Adverse	Beneficial
Climate	None	None
Air Quality	None	None
Noise	None	None
Topography	Minor Adverse	Beneficial
Geology	Minor Adverse	Beneficial
Soils	Minor Adverse	Beneficial
Water Resources	Minor Adverse	Beneficial
Wetlands and Floodplains	Minor Adverse	Beneficial
Aquatic Habitat	Minor Adverse	Beneficial
Riparian Habitat	Minor Adverse	Beneficial
Terrestrial Ecosystems	Minor Adverse	Beneficial
Fauna	Minor Adverse	Beneficial
Endangered, Threatened, and Rare Species	Minor Adverse	Beneficial
Land Use	None	Beneficial
Facilities	None	None
Hazardous and Toxic Materials	None	None

Note: * Resource areas presented in this column are adapted from the resources described in **Sections 3, 4, and 5**, and those resource areas requiring assessment pursuant to the EIAP (32 CFR Part 989) and AFI 32-7061, Environmental Impact Analysis Process.

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APPENDIX A

Acronyms and Abbreviations

ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit	DoD	Department of Defense
107 ARW	107 th Air Refueling Wing	DoDD	Department of Defense Directive
914 AW	914 th Airlift Wing	DoDI	Department of Defense Instruction
ABS	Air Base Squadron		
ADG	Air Defense Group	e ² M	engineering environmental Management
AFI	Air Force Instruction	EA	Environmental Assessment
AFRC	Air Force Reserve Command	EIAP	Environmental Impact Analysis Process
AFPD	Air Force Policy Directive		
AGE	aerospace ground equipment	EIS	Environmental Impact Statement
AGL	above ground level	EO	Executive Order
AMC	Air Mobility Command	EPC	Environmental Protection Committee
ARS	Air Reserve Station	ERP	Environmental Restoration Program
BASH	Bird/Wildlife Aircraft Strike Hazard	ESA	Endangered Species Act
BFI	Browning Ferris Industries	FEMA	Federal Emergency Management Agency
BMP	Best Management Practice		
BOD	biological oxygen demand	FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
BOS	Base Operations Services	FIS	Fighter Interceptor Squadron
CE	Civil Engineering	FIRM	Flood Insurance Rate Map
CEQ	Council on Environmental Quality	FONPA	Finding of No Practicable Alternative
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	FONSI	Finding of No Significant Impact
CEV	Environmental Flight	FY	Fiscal Year
CFR	Code of Federal Regulations	GIS	Geographical Information System
cm	centimeter	HAZMAT	hazardous materials
CWA	Clean Water Act	HQ	Headquarters
dB	decibel	ICM	Interim Corrective Measure

INRMP	Integrated Natural Resources Management Plan	ROD	Record of Decision
IPM	Integrated Pest Management	SAF/MIQ	Secretary of the Air Force - Environment, Safety, and Occupational Health
JP-8	Jet Petroleum-8		
LGLRFO	Lower Great Lakes Fishery Resources Office	SAIA	Sikes Act and Improvement Act
MOA	Memorandum of Agreement	SPDES	State Pollutant Discharge Elimination System
MOU	Memorandum of Understanding	SWMU	Solid Waste Management Unit
NDI	Non-Destructive Inspection	SWPPP	Stormwater Pollution Prevention Plan
NEPA	National Environmental Policy Act	TAG	Tactical Airlift Group
NFIA	Niagara Falls International Airport	TFG	Tactical Fighter Group
NFTA	Niagara Frontier Transportation Authority	TSD	treatment, storage, and disposal
NPDES	National Pollutant Discharge Elimination System	U.S.C.	United States Code
NPL	National Priorities List	USACE	U.S. Army Corps of Engineers
NRCS	Natural Resources Conservation Service	USAF	U.S. Air Force
NYANG	New York Air National Guard	USAF/ILEV	U.S. Air Force Integrated Logistics and Environment
NYSDEC	New York State Department of Environmental Conservation	USDA	United States Department of Agriculture
OCP	Operational Component Plan	USEPA	U.S. Environmental Protection Agency
P.L.	Public Law	USFWS	U.S. Fish and Wildlife Service
POL	Petroleum, Oils, and Lubricants	WS	Wildlife Services
RCRA	Resource Conservation and Recovery Act	y-o-y	young of year

APPENDIX B

INRMP Documentation and Correspondence

New York State Department of Environmental Conservation

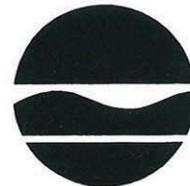
Division of Fish, Wildlife & Marine Resources

New York Natural Heritage Program

625 Broadway, Albany, New York 12233-4757

Phone: (518) 402-8935 • FAX: (518) 402-8925

www.dec.state.ny.us



Alexander B. Grannis
Commissioner

January 14, 2009

Megan Griffin
Engineering - Environmental Management
111 Presidential Blvd, Suite 234
Bala Cynwyd, PA 19004

Dear Ms. Griffin:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed Management Plan/Environmental Assessment for the Niagara Falls Air Reserve Station, area as indicated on the map you provided, located Niagara Falls, Niagara County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and should not be released to the public without permission from the New York Natural Heritage Program.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environment impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,


Tara Salerno, Information Services
New York Natural Heritage Program

cc: Reg. 9, Wildlife Mgr.
Peter Nye, Endangered Species Unit, Albany

Natural Heritage Report on Rare Species and Ecological Communities



NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

- ~This report contains SENSITIVE information that should not be released to the public without permission from the NY Natural Heritage Program.
~Refer to the User's Guide for explanations of codes, ranks and fields.
~Location maps for certain species and communities may not be provided 1) if the species is vulnerable to disturbance, 2) if the location and/or extent is not precisely known, 3) if the location and/or extent is too large to display, and/or 4) if the animal is listed as Endangered or Threatened by New York State.

Natural Heritage Report on Rare Species and Ecological Communities



BIRDS

Circus cyaneus

Northern Harrier	NY Legal Status: Threatened	NYS Rank: S3B,S3N - Vulnerable	Office Use 9825
Breeding	Federal Listing: Last Report: **	Global Rank: G5 - Demonstrably secure EO Rank: **	ESU
	County: Erie, Niagara		
	Town: Grand Island, Wheatfield, Lewiston, Tuscarora Indian Reservation		
	Location: At, or in the vicinity of, the project site.		
	Directions: **		
	General Quality and Habitat: **For information on the population at this location and management considerations, please contact the NYS DEC Regional Wildlife Manager for the Region where the project is located.		

CRAYFISH and AMPHIPODS

Cambarus diogenes

Devil Crawfish	NY Legal Status: Unlisted	NYS Rank: S2 - Imperiled	Office Use 11179
	Federal Listing: Last Report: 2000-11-03	Global Rank: G5 - Demonstrably secure EO Rank: Extant	
	County: Niagara		
	Town: Niagara		
	Location: Niagara Falls Air Force Reserve Base Ditch		
	Directions: The crawfish were observed in a ditch on the northwest side of the Niagara Falls Air Force Reserve Base.		
	General Quality and Habitat: There are no global rank specifications for this species, but the survey was very thorough and would be sufficient to assign a rank if specifications were available. The crawfish were observed in a ditch with cattails, purple loosestrife, watercress, water plantain, curly dock, and duckweed. Associated species: Calico crayfish. There is a mowed meadow on both sides of the ditch.		

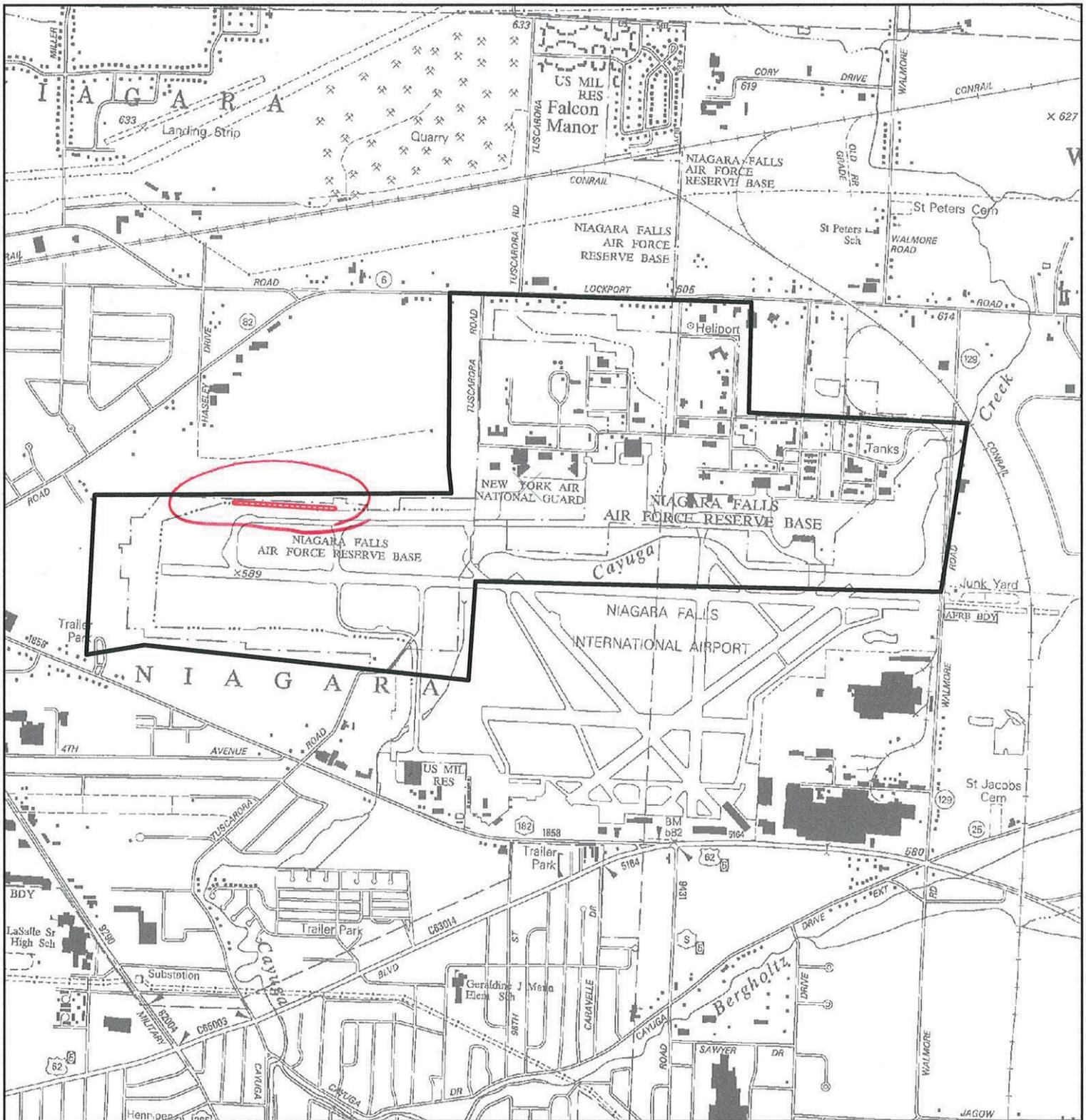
2 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at <http://www.natureserve.org/explorer>, from NYSDEC at <http://www.dec.ny.gov/animals/7494.html> (for animals), and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

More detailed information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org. For descriptions of all community types, go to <http://www.dec.ny.gov/animals/29384.html> and click on DRAFT-Ecological Communities of New York State.

Natural Heritage Map of Rare Species and Ecological Communities

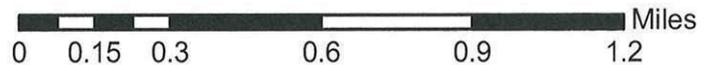
Prepared December 31, 2008 by the NY Natural Heritage Program, NYS DEC Albany, NY



Legend

-  Project Site
- NY Natural Heritage Program Database Records*
-  Devil Crawfish

1:24,000



*The locations that are displayed are considered sensitive and should not be released to the public without permission. We do not provide map locations for all records. Please see report for details.



USERS GUIDE TO NY NATURAL HERITAGE DATA

New York Natural Heritage Program, 625 Broadway, 5th Floor, Albany, NY 12233-4757 phone: (518) 402-8935



NATURAL HERITAGE PROGRAM: The NY Natural Heritage Program is a partnership between the NYS Department of Environmental Conservation (NYS DEC) and The Nature Conservancy. Our Mission is to facilitate the conservation of New York's biodiversity by providing comprehensive information and scientific expertise on rare species and natural ecosystems to resource managers and other conservation partners. We accomplish this mission by combining thorough field inventories, scientific analyses, expert interpretation, and the most comprehensive database on New York's distinctive biodiversity to deliver the highest quality information for natural resource planning, protection, and management.

DATA SENSITIVITY: The data provided in the report are ecologically sensitive and should be treated in a sensitive manner. The report is for your in-house use and should **not** be released, distributed or incorporated in a public document without prior permission from the Natural Heritage Program.

EO RANK: A letter code for the quality of the occurrence of the rare species or significant natural community, based on population size or area, condition, and landscape context.

- A-E = Extant: A=Excellent, B=Good, C=Fair, D=Poor, E=Extant but with insufficient data to assign a rank of A-D.
- F = Failed to find. Did not locate species during a limited search, but habitat is still there and further field work is justified.
- H = Historical. Historical occurrence without any recent field information.
- X = Extirpated. Field/other data indicates element/habitat is destroyed and the element no longer exists at this location.
- U = Extant/Historical status uncertain.
- Blank = Not assigned.

LAST REPORT: The date that the rare species or significant natural community was last observed at this location, as documented in the Natural Heritage databases. The format is most often YYYY-MM-DD.

NY LEGAL STATUS – Animals:

Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Animals listed as Endangered, Threatened, or Special Concern are protected against taking, importation, transportation, possession, or sale without a permit. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.

- E - Endangered Species:** any species which meet one of the following criteria:
 - Any native species in imminent danger of extirpation or extinction in New York.
 - Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.
- T - Threatened Species:** any species which meet one of the following criteria:
 - Any native species likely to become an endangered species within the foreseeable future in NY.
 - Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.
- SC - Special Concern Species:** those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York.
- P - Protected Wildlife** (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.
- U - Unprotected** (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license to take may be required.
- G - Game** (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

NY LEGAL STATUS – Plants:

The following categories are defined in regulation 6NYCRR part 193.3 and apply to NYS Environmental Conservation Law section 9-1503.

- E - Endangered Species:** listed species are those with:
 - 5 or fewer extant sites, or
 - fewer than 1,000 individuals, or
 - restricted to fewer than 4 U.S.G.S. 7 ½ minute topographical maps, or
 - species listed as endangered by U.S. Dept. of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.
- T - Threatened:** listed species are those with:
 - 6 to fewer than 20 extant sites, or
 - 1,000 to fewer than 3,000 individuals, or
 - restricted to not less than 4 or more than 7 U.S.G.S. 7 and ½ minute topographical maps, or
 - listed as threatened by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

R - Rare: listed species have:

- 20 to 35 extant sites, or
- 3,000 to 5,000 individuals statewide.

V - Exploitably vulnerable: listed species are likely to become threatened in the near future throughout all or a significant portion of their range within the state if causal factors continue unchecked.

U - Unprotected; no state status.

FEDERAL STATUS (PLANTS and ANIMALS): The categories of federal status are defined by the United States Department of the Interior as part of the 1974 Endangered Species Act (see Code of Federal Regulations 50 CFR 17). The species listed under this law are enumerated in the Federal Register vol. 50, no. 188, pp. 39526 - 39527. The codes below without parentheses are those used in the Federal Register. The codes below in parentheses are created by Heritage to deal with species which have different listings in different parts of their range, and/or different listings for different subspecies or varieties.

(blank) = No Federal Endangered Species Act status.

LE = Formally listed as endangered.

LT = Formally listed as threatened.

C = Candidate for listing.

LE,LT = Formally listed as endangered in part of its range, and as threatened in the other part; or, one or more subspecies or varieties is listed as endangered, and the others are listed as threatened.

LT,PDL = Populations of the species in New York are formally listed as threatened, and proposed for delisting.

GLOBAL AND STATE RANKS (animals, plants, ecological communities and others): Each element has a global and state rank as determined by the NY Natural Heritage Program. These ranks carry no legal weight. The global rank reflects the rarity of the element throughout the world and the state rank reflects the rarity within New York State. Intraspecific taxa are also assigned a taxon rank to reflect the infraspecific taxon's rank throughout the world. ? = Indicates that the state or global rank is uncertain and more information is needed. Range ranks, e.g. S1S2, indicate not enough information is available to distinguish between two ranks.

GLOBAL RANK:

- G1 - Critically imperiled** globally because of extreme rarity (5 or fewer occurrences), or very few remaining acres, or miles of stream) or especially vulnerable to extinction because of some factor of its biology.
- G2 - Imperiled** globally because of rarity (6 - 20 occurrences, or few remaining acres, or miles of stream) or very vulnerable to extinction throughout its range because of other factors.
- G3 - Vulnerable:** Either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g. a physiographic region), or vulnerable to extinction throughout its range because of other factors.
- G4 - Apparently secure** globally, though it may be quite rare in parts of its range, especially at the periphery.
- G5 - Demonstrably secure** globally, though it may be quite rare in parts of its range, especially at the periphery.
- GH - Historically known**, with the expectation that it might be rediscovered.
- GX - Species believed to be extinct.**
- GU - Lack of information or substantial conflicting information about status or trends makes ranking infeasible at this time.**

NYS RANK:

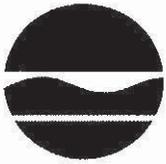
- S1 - Critically imperiled:** Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.
- S2 - Imperiled:** Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.
- S3 - Vulnerable:** Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.
- S4 - Apparently secure** in New York State.
- S5 - Demonstrably secure** in New York State.
- SH - Historically known** from New York State, but not seen in the past 20 years.
- SX - Apparently extirpated** from New York State.
- SU - Lack of information or substantial conflicting information about status or trends makes ranking infeasible at this time.**

SxB and SxN, where Sx is one of the codes above, are used for migratory animals, and refer to the rarity within New York State of the breeding (B)populations and the non-breeding populations (N), respectively, of the species.

TAXON (T) RANK: The T-ranks (T1 - T5) are defined the same way as the Global ranks (G1 - G5), but the T-rank refers only to the rarity of the subspecific taxon.

T1 through T5 - See Global Rank definitions above.

Q - Indicates a question exists whether or not the taxon is a good taxonomic entity.



New York State Department of Environmental Conservation

Regional Permit Administrators

Region	Counties	Regional Permit Administrator
1	Nassau & Suffolk FAX: 631-444-0360	Roger Evans NYSDEC 50 Circle Rd SUNY @ Stony Brook Stony Brook, NY 11790-3409 631-444-0365 631-444-0355 (Duty Analyst-M,W&F only)
2	New York City, (Boroughs of Manhattan, Brooklyn, Bronx, Queens & Staten Island) FAX: 718-482-4975	John Cryan NYSDEC One Hunters Point Plaza 47-40 21st St. Long Island City, NY 11101-5407 718-482-4997
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster & Westchester FAX: 845-255-3042	Margaret Duke NYSDEC 21 South Putt Corners Rd. New Paltz, NY 12561-1620 845-256-3054
4	Albany, Columbia, Greene, Montgomery, Rensselaer & Schenectady FAX: 518-357-2460	William Clarke NYSDEC 1130 North Westcott Rd. Schenectady, NY 12306-2014 518-357-2069
4(sub- office)	Delaware, Otsego & Schoharie FAX: 607-652-2342	Kent Sanders* NYSDEC 65561 State Highway - Route 10 HCR #1, Box 3A Stamford, NY 12167-9503 607-652-7741
5	Clinton, Essex, Franklin & Hamilton FAX: 518-897-1394	Thomas Hall NYSDEC Route 86, P.O. Box 296 Ray Brook, NY 12977-0296 518-897-1234
5(sub- office)	Fulton, Saratoga, Warren & Washington FAX: 518-623-3603	Thomas Hall NYSDEC P.O. Box 220 232 Golf Course Rd. Warrensburg, NY 12885-0220 518-623-1281

6	Jefferson, Lewis & St. Lawrence FAX: 315-785-2242	Larry Ambeau NYSDEC State Office Bldg. 317 Washington St. Watertown, NY 13601-3787 315-785-2245 or 2246
6(sub-office)	Herkimer & Oneida FAX: 315-793-2748	Patrick Clearey* NYSDEC State Office Building 207 Genesee St. Utica, NY 13501-3787 315-793-2555
7	Cayuga, Madison, Onondaga & Oswego FAX: 315-426-7425	John Feltman NYSDEC 615 Erie Blvd. West (Env. Permits Room 206) Syracuse, NY 13204-2400 315-426-7438
7(sub-office)	Broome, Chenango, Cortland, Tioga & Tompkins FAX: 607-753-8532	Michael Barylski* NYSDEC 1285 Fisher Ave. Cortland, NY 13045-1090 607-753-3095
8	Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne & Yates FAX: 585-226-2830	Peter Lent NYSDEC 6274 East Avon Lima Rd. Avon, NY 14414-9519 585-226-2466
9	Erie, Niagara & Wyoming FAX: 716-851-7168	Steve Doleski NYSDEC 270 Michigan Ave. Buffalo, NY 14203-2999 716-851-7165
9(sub-office)	Allegany, Cattaraugus, & Chautauqua FAX: 716-372-2113	Charles Cranston* NYSDEC Suite 3, 182 East Union Allegany, NY 14706-1328 716-372-0645

*Deputy Regional Permit Administrator

Niagara County

Federally Listed Endangered and Threatened Species and Candidate Species

This list represents the best available information regarding known or likely County occurrences of Federally-listed and candidate species and is subject to change as new information becomes available.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Bald eagle ¹	<i>Haliaeetus leucocephalus</i>	D
Eastern prairie fringed orchid (Historic)	<i>Platanthera leucophea</i>	T

Status Codes: E=Endangered T=Threatened P=Proposed C=Candidate D=Delisted

¹ The bald eagle was delisted on August 8, 2007. While there are no ESA requirements for bald eagles after this date, the eagles continue to receive protection under the Bald and Golden Eagle Protection Act (BGEPA). Please follow the Service's May 2007 Bald Eagle Management Guidelines to determine whether you can avoid impacts under the BGEPA for your projects. If you have any questions, please contact the endangered species branch in our office.

Information current as of: 11/10/2008

APPENDIX C

Natural Resources Database

Table C-1-1. Niagara Falls ARS Natural Resources Database

DOCUMENT NAME	DATE
Integrated Natural Resources Management Plan	February 1998
General Plan	November 1998
Site Management Plan for the Northern Harrier	January 1999
Site Management Plan for the Short-eared Owl	May 1999
Inventory of Natural Resources, Habitat, and Threatened and Endangered Species	March 2001
The Effects of Mowing on Grassland Birds	June 2001
Landscape Management Plan	April 2002
The Distribution and Abundance of Purple Loosestrife on the Niagara Falls Air Reserve Station, Niagara Falls, New York	September 2003
The Relative Abundance and Activity Patterns of Short-eared Owls, Northern Harriers, and Associated Fauna on Niagara Falls Air Reserve Station, Niagara Falls, New York	January 2004
Reevaluation of Wetland Boundaries and Assessment of Wetland Values and Functions	February 2004
Impacts of Storm Water Discharge from Niagara Falls Air Reserve Station on Cayuga Creek	January 2005
Short-eared Owl and Northern Harrier Management	February 2005
Hydrology and Hydraulic Report for Cayuga Creek and Unnamed Tributary to Cayuga Creek	June 2005
Impacts of Grass Mowing on Bird Species in the Semi-Improved Areas	January 2006
Management and Control of Purple Loosestrife and Common Reed	February 2007
Tracking Sources of Contaminants in Cayuga Creek	September 2007
Tree Inventory	March 2008
Bird Aircraft Strike Hazard (BASH) Reduction Plan	July 2008
An Assessment of Management and Control of Purple Loosestrife	September 2008
Threatened and Endangered Species Inventory	February 2009
Pest Management Plan	June 2009
Hazardous Material and Emergency Training and Response (HAZMAT) Plan	July 2009
Storm Water Pollution Prevention Plan	December 2009



The

Sikes Act

As Amended through 2003

As amended by:

Public Law 108-136, the National Defense Authorization Act of 2004

Prepared by:

National Military Fish and Wildlife Association
Government Affairs Committee

2004

The Sikes Act

An Act to promote effectual planning, development, maintenance, and coordination of wildlife, fish, and game conservation and rehabilitation in military reservations, approved September 15, 1960, commonly referred to as the “Sikes Act.”

TITLE 16 - CONSERVATION¹

CHAPTER 5C – CONSERVATION PROGRAMS ON GOVERNMENT LANDS

SUBCHAPTER I – CONSERVATION PROGRAMS ON MILITARY INSTALLATIONS

Sec. 670 [SECTION 1.] SHORT TITLE.

This Act may be cited as the “Sikes Act.”

Sec. 670-1. [SECTION 100.] DEFINITIONS.

In this title:

(1) Military installation. The term “military installation”—

(A) means any land or interest in land owned by the United States and administered by the Secretary of Defense or the Secretary of a military department, except land under the jurisdiction of the Assistant Secretary of the Army having responsibility for civil works;

(B) includes all public lands withdrawn from all forms of appropriation under public land laws and reserved for use by the Secretary of Defense or the Secretary of a military department; and

(C) does not include any land described in subparagraph (A) or (B) that is subject to an approved recommendation for closure under the Defense Base Closure and Realignment Act of 1990 (part A of title XXIX of Public Law 101-510; 10 USC 2687 note).

(2) State fish and wildlife agency.--The term “State fish and wildlife agency” means the one or more agencies of State government that are responsible under State law for managing fish or wildlife resources.

¹ To simplify things, this handout uses the version of the Act found in the United States Code. The citation is “16 USC 670, et seq.” But beware, not all versions of the USC, printed or on-line, exactly agree on all words and punctuation.

(3) United States.--The term “United States” means the States, the District of Columbia, and the territories and possessions of the United States.

Sec. 670a. [SECTION 101.] COOPERATIVE PLAN FOR CONSERVATION AND REHABILITATION

(a) Authority of Secretary of Defense.

(1) Program.

(A) In general. The Secretary of Defense shall carry out a program to provide for the conservation and rehabilitation of natural resources on military installations.

(B) Integrated natural resources management plan. To facilitate the program, the Secretary of each military department shall prepare and implement an integrated natural resources management plan for each military installation in the United States under the jurisdiction of the Secretary, unless the Secretary determines that the absence of significant natural resources on a particular installation makes the preparation of such a plan inappropriate.

(2) Cooperative preparation. The Secretary of a military department shall prepare each integrated natural resources management plan for which the Secretary is responsible in cooperation with the Secretary of the Interior, acting through the Director of the United States Fish and Wildlife Service, and the head of each appropriate State fish and wildlife agency for the State in which the military installation concerned is located. Consistent with paragraph (4), the resulting plan for the military installation shall reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

(3) Purposes of program. Consistent with the use of military installations to ensure the preparedness of the Armed Forces, the Secretaries of the military departments shall carry out the program required by this subsection to provide for—

(A) the conservation and rehabilitation of natural resources on military installations;

(B) the sustainable multipurpose use of the resources, which shall include hunting, fishing, trapping, and nonconsumptive uses; and

(C) subject to safety requirements and military security, public access to military installations to facilitate the use.

(4) Effect on other law. Nothing in this title—

(A)(i) affects any provision of a Federal law governing the conservation or protection of fish and wildlife resources; or

(ii) enlarges or diminishes the responsibility and authority of any State for the protection and management of fish and resident wildlife; or

(B) except as specifically provided in the other provisions of this section and in section 102, authorizes the Secretary of a military department to require a Federal license or permit to hunt, fish, or trap on a military installation.

(b) Required elements of the plans.- Consistent with the use of military installations to ensure the preparedness of the Armed Forces, each integrated natural resources management plan prepared under subsection (a)--

(1) shall, where appropriate and applicable, provide for--

(A) fish and wildlife management, land management, forest management, and fish and wildlife-oriented recreation;

(B) fish and wildlife habitat enhancement or modifications;

(C) wetland protection, enhancement, and restoration, where necessary for support of fish or wildlife;

(D) integration of, and consistency among, the various activities conducted under the plan;

(E) establishment of specific natural resource management objectives and time frames for proposed action;

(F) sustained use by the public of natural resources to the extent such use is not inconsistent with the needs of fish and wildlife resources management;

(G) public access to the military installation that is necessary or appropriate for the use described in subparagraph (F), subject to requirements necessary to ensure safety and military security;

(H) enforcement of natural resource laws and regulations;

(I) no net loss in the capability of military installation lands to support the military mission of the installation; and

(J) such other activities as the Secretary of the military department considers appropriate;

(B) must be reviewed as to operation and effect by the parties thereto on a regular basis, but not less often than every 5 years; and

(3) may stipulate the issuance of special State hunting and fishing permits to individuals and require payment of nominal fees therefore, which fees shall be utilized for the protection, conservation, and management of fish and wildlife, including habitat improvement and related activities in accordance with the integrated natural resources management plan; except that--

a. the Commanding Officer of the installation or persons designated by that Officer are authorized to enforce such special hunting and fishing permits and to collect, spend, administer, and account for fees for the permits, acting as agent or agents of the State if the cooperative plan so provides, and

(B) the fees collected under this paragraph may not be expended with respect to other than the military installation on which collected, unless the military installation is subsequently closed, in which case the fees may be transferred to another military installation to be used for the same purposes.

(c) Prohibitions on sale and lease of lands unless effects compatible with plan. After an integrated natural resources management plan is agreed to under subsection (a) of this section—

(1) no sale of land, or forest products from land, that is within a military installation covered by that plan may be made under section 2665(a) or (b) of title 10; and

(2) no leasing of land that is within the installation may be made under section 2667 of such title 10;

unless the effects of that sale or leasing are compatible with the purposes of the plan.

(d) Implementation and enforcement of integrated natural resources management plans.

With regard to the implementation and enforcement of integrated natural resources management plans agreed to under subsection (a) of this section—

(1) neither Office of Management and Budget Circular A-76 nor any successor circular thereto applies to the procurement of services that are necessary for that implementation and enforcement; and

(2) priority shall be given to the entering into of contracts for the procurement of such implementation and enforcement services with Federal and State agencies having responsibility for the conservation or management of fish or wildlife.

(e) Applicability of other laws.

Integrated natural resources management plans agreed to under the authority of this section and section 670b [Section 102] of this title shall not be deemed to be, nor treated as, cooperative agreements to which chapter 63 of title 31 applies.

(f) Reviews and reports.--

(1) Secretary of Defense. Not later than March 1 of each year, the Secretary of Defense shall review the extent to which integrated natural resources management plans were prepared or were in effect and implemented in accordance with this subchapter in the preceding year, and submit a report on the findings of the review to the committees. Each report shall include--

(A) the number of integrated natural resources management plans in effect in the year covered by the report, including the date on which each plan was issued in final form or most recently revised;

(B) the amounts expended on conservation activities conducted pursuant to the plans in the year covered by the report; and

(C) an assessment of the extent to which the plans comply with this title.

(2) Secretary of the Interior.--Not later than March 1 of each year and in consultation with the heads of State fish and wildlife agencies, the Secretary of the Interior shall submit a report to the committees on the amounts expended by the Department of the Interior and the State fish and wildlife agencies in the year covered by the report on conservation activities conducted pursuant to integrated natural resources management plans.

(3) Definition of committees. -- In this subsection, the term "committees" means--

(A) the Committee on Resources and the Committee on Armed Services of the House of Representatives; and

(B) the Committee on Armed Services and the Committee on Environment and Public Works of the Senate.

(g) PILOT PROGRAM FOR INVASIVE SPECIES MANAGEMENT FOR MILITARY INSTALLATIONS IN GUAM-

(1) INCLUSION OF INVASIVE SPECIES MANAGEMENT- During fiscal years 2004 through 2008, the Secretary of Defense shall, to the extent practicable and conducive to military readiness, incorporate in integrated natural resources management plans for military installations in Guam the management, control, and eradication of invasive species--

(A) that are not native to the ecosystem of the military installation; and

(B) the introduction of which cause or may cause harm to military readiness, the environment, or human health and safety.

(2) CONSULTATION- The Secretary of Defense shall carry out this subsection in consultation with the Secretary of the Interior.

Sec. 670b. [SECTION 102.] MIGRATORY GAME BIRDS; PERMITS; FEES; STAMP ACT AND STATE LAW REQUIREMENTS

The Secretary of Defense in cooperation with the Secretary of the Interior and the appropriate State agency is authorized to carry out a program for the conservation, restoration and management of migratory game birds on military installations, including the issuance of special hunting permits and the collection of fees therefor, in accordance with an integrated natural resources management plan mutually agreed upon by the Secretary of Defense, the Secretary of the Interior and the appropriate State agency: Provided, That possession of a special permit for hunting migratory game birds issued pursuant to this subchapter shall not relieve the permittee of the requirements of the Migratory Bird Hunting Stamp Act as amended [16 U.S.C. 718 et seq.] nor of the requirements pertaining to State law set forth in Public Law 85-337.

Sec. 670c. [SECTION 103.] PROGRAM FOR PUBLIC RECREATION

(a) Program authorized--The Secretary of Defense is also authorized to carry out a program for the development, enhancement, operation, and maintenance of public outdoor recreation resources at military installations in accordance with an integrated natural resources management plan mutually agreed upon by the Secretary of Defense and the Secretary of the Interior, in consultation with the appropriate State agency designated by the State in which the installations are located.

(b) Access for disabled veterans, military dependents with disabilities, and other persons with disabilities--

(1) In developing facilities and conducting programs for public outdoor recreation at military installations, consistent with the primary military mission of the installations, the Secretary of Defense shall ensure, to the extent reasonably practicable, that outdoor recreation opportunities (including fishing, hunting, trapping, wildlife viewing, boating, and camping) made available to the public also provide access for persons described in paragraph (2) when topographic, vegetative, and water resources allow access for such persons without substantial modification to the natural environment.

(2) Persons referred to in paragraph (1) are the following:

(A) Disabled veterans.

(B) Military dependents with disabilities.

(C) Other persons with disabilities, when access to a military installation for such persons and other civilians is not otherwise restricted.

(3) The Secretary of Defense shall carry out this subsection in consultation with the Secretary of Veterans Affairs, national service, military, and veterans organizations, and sporting organizations in the private sector that participate in outdoor recreation projects for persons described in paragraph (2).

(c) Acceptance of donations.--In connection with the facilities and programs for public outdoor recreation at military installations, in particular the requirement under subsection (b) of this section to provide access for persons described in paragraph (2) of such subsection, the Secretary of Defense may accept--

(1) the voluntary services of individuals and organizations; and

(2) donations of property, whether real or personal.

(d) Treatment of volunteers.--A volunteer under subsection (c) of this section shall not be considered to be a Federal employee and shall not be subject to the provisions of law relating to Federal employment, including those relating to hours of work, rates of compensation, leave, unemployment compensation, and Federal employee benefits, except that--

(1) for the purposes of the tort claims provisions of chapter 171 of title 28, the volunteer shall be considered to be a Federal employee; and

(2) for the purposes of subchapter I of chapter 81 of title 5, relating to compensation to Federal employees for work injuries, the volunteer shall be considered to be an employee, as defined in section 8101(1)(B) of title 5, and the provisions of such subchapter shall apply.

Sec. 670c-1. [SECTION 103a.] COOPERATIVE AGREEMENTS FOR LAND MANAGEMENT ON DEPARTMENT OF DEFENSE INSTALLATIONS.

(a) Authority of Secretary of a military department

The Secretary of a military department may enter into cooperative agreements with States, local governments, nongovernmental organizations, and individuals to provide for the maintenance and improvement of natural resources on, or to benefit natural and historic research on, Department of Defense installations.

(b) Multiyear agreements

Funds appropriated to the Department of Defense for a fiscal year may be obligated to cover the cost of goods and services provided under a cooperative agreement entered into under subsection (a) of this section or through an agency agreement under section 1535 of title 31 during any 18-month period beginning in that fiscal year, without regard to whether the agreement crosses fiscal years.

(c) Availability of funds; agreements under other laws

Cooperative agreements entered into under this section shall be subject to the availability of funds and shall not be considered, nor be treated as, cooperative agreements to which chapter 63 of title 31 applies.

Sec. 670d. [SECTION 104.] LIABILITY FOR FUNDS; ACCOUNTING TO COMPTROLLER GENERAL.

The Department of Defense is held free from any liability to pay into the Treasury of the United States upon the operation of the program or programs authorized by this subchapter any funds which may have been or may hereafter be collected, received or expended pursuant to, and for the purposes of, this subchapter, and which collections, receipts and expenditures have been properly accounted for to the Comptroller General of the United States.

Sec. 670e. [SECTION 105.] APPLICABILITY TO OTHER LAWS; NATIONAL FOREST LANDS.

Nothing herein contained shall be construed to modify, amend or repeal any provision of Public Law 85-337, nor as applying to national forest lands administered pursuant to the provisions of section 9 of the Act of June 7, 1924 (43 Stat. 655), nor section 315m of title 43.

Sec. 670e-1. [SECTION 106.] FEDERAL ENFORCEMENT OF OTHER LAWS.

All Federal laws relating to the management of natural resources on Federal land may be enforced by the Secretary of Defense with respect to violations of the laws that occur on military installations within the United States.

Sec. 670e-2. [SECTION 107.] NATURAL RESOURCES MANAGEMENT SERVICES.

To the extent practicable using available resources, the Secretary of each military department shall ensure that sufficient numbers of professionally trained natural resources management personnel and natural resources law enforcement personnel are available and assigned responsibility to perform tasks necessary to carry out this subchapter, including the preparation and implementation of integrated natural resources management plans.

SENSE OF CONGRESS REGARDING SECTION 107-

(1) Congress finds the following:

(A) The Department of Defense maintains over 25,000,000 acres of valuable fish and wildlife habitat on approximately 400 military installations nationwide.

(B) These lands contain a wealth of plant and animal life, vital wetlands for migratory birds, and nearly 300 federally listed threatened species and endangered species.

(C) Increasingly, land surrounding military bases are being developed with residential and commercial infrastructure that fragments fish and wildlife habitat and decreases its ability to support a diversity of species.

(D) Comprehensive conservation plans, such as integrated natural resource management plans under the Sikes Act (16 U.S.C. 670 et seq.), can ensure that these ecosystem values can be protected and enhanced while allowing these lands to meet the needs of military operations.

(E) Section 107 of the Sikes Act (16 U.S.C. 670e-2) requires sufficient numbers of professionally trained natural resources management personnel and natural resources law enforcement personnel to be available and assigned responsibility to perform tasks necessary to carry out title I of the Sikes Act, including the preparation and implementation of integrated natural resource management plans.

(F) Managerial and policymaking functions performed by Department of Defense on-site professionally trained natural resource management personnel on military installations are appropriate governmental functions.

(G) Professionally trained civilian biologists in permanent Federal Government career managerial positions are essential to oversee fish and wildlife and natural resource conservation programs and are essential to the conservation of wildlife species on military land.

(2) It is the sense of Congress that the Secretary of Defense should take whatever steps are necessary to ensure that section 107 of the Sikes Act (16 U.S.C. 670e-2) is fully implemented consistent with the findings made in paragraph (1).

Sec. 670f. [SECTION 108.] APPROPRIATIONS AND EXPENDITURES.

(a) Expenditures exclusively under plans; availability of funds until expended.

The Secretary of Defense shall expend such funds as may be collected in accordance with the integrated natural resources management plans agreed to under sections 670a and 670b of this title and cooperative agreements agreed to under section 670c-1 of this title and for no other purpose. All funds that are so collected shall remain available until expended.

(b) Authorization of appropriations to Secretary of Defense.

There are authorized to be appropriated to the Secretary of Defense not to exceed \$1,500,000 for each of the fiscal years 2004 through 2008, to carry out this subchapter, including the enhancement of fish and wildlife habitat and the development of public recreation and other facilities, and to carry out such functions and responsibilities as the Secretary may

have under cooperative agreements entered into under section 670c-1 of this title. The Secretary of Defense shall, to the greatest extent practicable, enter into agreements to utilize the services, personnel, equipment, and facilities, with or without reimbursement, of the Secretary of the Interior in carrying out the provisions of this section.

(c) Authorization of appropriations to Secretary of the Interior.

There are authorized to be appropriated to the Secretary of the Interior not to exceed \$3,000,000 for each of the fiscal years 2004 through 2008, to carry out such functions and responsibilities as the Secretary may have under integrated natural resources management plans to which such Secretary is a party under this section, including those for the enhancement of fish and wildlife habitat and the development of public recreation and other facilities.

(d) Use of other conservation or rehabilitation authorities.

The Secretary of Defense and the Secretary of the Interior may each use any authority available to him under other laws relating to fish, wildlife, or plant conservation or rehabilitation for purposes of carrying out the provisions of this subchapter.

**MEMORANDUM OF UNDERSTANDING
AMONG
THE U.S. DEPARTMENT OF DEFENSE
AND
THE U.S. FISH AND WILDLIFE SERVICE
AND
THE INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES
FOR A
COOPERATIVE INTEGRATED NATURAL RESOURCE MANAGEMENT PROGRAM
ON MILITARY INSTALLATIONS**

A. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to establish a cooperative relationship between the U.S. Department of Defense (DoD), the U.S. Department of the Interior, Fish and Wildlife Service (FWS), and the State fish and wildlife agencies as represented by the International Association of Fish and Wildlife Agencies (IAFWA) in preparing, reviewing, and implementing integrated natural resource management plans (INRMPs) on military installations.

B. BACKGROUND

In recognition that military lands have significant natural resources, Congress enacted the Sikes Act in 1960 to address wildlife conservation and public access on military installations. The 1997 amendments to the Sikes Act require the DoD to develop and implement an INRMP for each military installation with significant natural resources. The INRMP must be prepared in cooperation with the FWS and the State fish and wildlife agency (States) and reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources on military lands.

INRMPs provide for the management of natural resources, including fish, wildlife, and plants. They incorporate, to the maximum extent practicable, ecosystem management principles and provide the landscape necessary for the sustainment of military land uses. INRMPs allow for multipurpose uses of resources, including public access necessary and appropriate for those uses, provided such access does not conflict with military land use requirements. Effective partnering among the DoD, the FWS, and the States, initiated early in the planning process at national, regional, and the military installation levels, is essential to the development and implementation of comprehensive INRMPs. When such partnering involves the participation of all parties and synchronization of INRMPs with existing FWS and State natural resource management plans, the mutual agreement of all parties is achieved more easily. Consistent with the use of military installations to ensure the readiness of the Armed Forces, the purpose of INRMPs is to provide for the conservation and rehabilitation of natural resources on military lands. Thus, a clear understanding of land use objectives for military lands should enable DoD, the FWS, and the States to share a common understanding of land management requirements while preparing and reviewing INRMPs.

This MOU addresses the responsibilities of the Parties to facilitate optimum management of natural resources on military installations. It replaces a DoD-FWS MOU on “Ecosystem-based Management of Fish, Wildlife and Plant Resources on Military Lands” which expired May 17, 2004.

C. AUTHORITIES

This MOU is established under the authority of the Sikes Act, as amended, 16 U.S.C. 670a-670f, which requires the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations in cooperation with the FWS and the State fish and wildlife agencies. The DoD’s primary mission is national defense. DoD manages approximately 30 million acres of land and waters under the Sikes Act to conserve and protect biological resources while supporting sustained military land use.

The FWS manages approximately 96 million acres of the National Wildlife Refuge System, and administers numerous fish and wildlife conservation and management statutes and authorities, including: the Fish and Wildlife Coordination Act, the Migratory Bird Treaty Act of 1918, the Endangered Species Act, the Marine Mammal Protection Act, the Bald and Golden Eagle Protection Act, the Anadromous Fish Conservation Act, the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, the Federal Noxious Weed Act, the Alien Species Prevention Enforcement Act of 1992, the North American Wetland Conservation Act, and the Coastal Barrier Resources Act.

The States in general possess broad trustee and police powers over fish and wildlife within their borders, including – absent a clear expression of Congress’ intent to the contrary – fish and wildlife on Federal lands within their borders. Where Congress has given Federal agencies certain conservation responsibilities, such as for migratory birds or species listed as threatened or endangered under the Endangered Species Act, the States, in most cases, have cooperative management jurisdiction.

The Sikes Act (16 U.S.C. 670c-1) allows the Secretary of a military department to enter into cooperative agreements with States, local governments, nongovernmental organizations, and individuals to provide for the maintenance and improvement of natural resources, or to benefit natural and cultural resources research, on DoD installations.

The Sikes Act (16 U.S.C. 670f(b)) also encourages the Secretary of Defense, to the greatest extent practicable, to enter into agreements to use the services, personnel, equipment, and facilities, with or without reimbursement, of the Secretary of the Interior in carrying out the provisions of this section.

The Economy Act (31 U.S.C. 1535 and 1536) allows a Federal agency to enter into an agreement with another Federal agency for services, when those services can be rendered in a more convenient and cost effective manner by another Federal agency.

The Intergovernmental Cooperation Act of 1968 (P.L. 90-577 (82 Stat. 1098)) allows the “improvement of the administration of grants-in-aid to the States, to permit provision of reimbursable technical services to State and local government.

D. RESPONSIBILITIES

The Parties to this agreement hereby enter into a cooperative program of INRMP development and implementation with mutually agreed-upon fish and wildlife conservation objectives to satisfy the goals of the Sikes Act.

- 1. The DoD, the FWS and IAFWA (the Parties) mutually agree, in accordance with all applicable Federal, State and local laws and regulations:**
 - a. To meet at least annually to discuss implementation of this MOU. The DoD will coordinate the annual meeting and any other meetings related to this MOU. Proposed amendments to the MOU should be presented in writing to the parties at least 15 days prior to the annual meeting. The terms of this MOU and any proposed amendments may be reviewed at the annual meeting. The meeting may also review mutual Sikes Act accomplishments, research and technology needs, and other emerging issues.
 - b. To establish a Sikes Act Tripartite Working Group consisting of representatives from the Parties. This Working Group will meet at least quarterly to discuss and develop projects and documents to assist in the preparation and implementation of INRMPs and to discuss Sikes Act issues of national importance.
 - c. The Sikes Act Tripartite Working Group will encourage the establishment of INRMP Development and Implementation Teams to facilitate early communication during preparation, review, revision or implementation of an INRMP and to ensure that such INRMPs are comprehensive and implemented as mutually agreed.
 - d. Supplemental Sikes Act MOUs or other agreements may be developed at the regional and/or State level.
 - e. To recognize the current DoD and FWS Sikes Act Guidelines on <http://www.fws.gov> and <http://www.denix.osd.mil> as the guidance for communication and cooperation of the Parties represented by this MOU.
 - f. That none of the Parties to the MOU is relinquishing any authority, responsibility, or duty as required by law, regulation, policy, or directive.

- g. To engage in sound management practices for natural resource protection and management pursuant to this MOU with due regard for military readiness, the welfare of the public, native fish and wildlife, threatened and endangered species, and the environment.
- h. Consistent with DoD's primary military mission and to the extent reasonably practicable, to promote the sustainable multipurpose use of natural resources on military installations, to include hunting, fishing, trapping, and nonconsumptive uses such as wildlife viewing, boating, and camping.
- i. To designate the individuals listed below as the national representative from each signatory to participate in the activities pursuant to this MOU. Representatives may also be designated at the regional and local levels to participate in similar Sikes Act planning or coordination activities.
 - i. DoD: Conservation Team Leader, ODUSD (I&E) EM, 1225 Clark Street Suite 1500, Arlington, VA 22202-4336
 - ii. FWS: National Sikes Act Coordinator, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 400, Arlington, VA 22203.
 - iii. IAFWA: Executive Vice-President, IAFWA, 444 North Capitol Street, NW, Suite 544, Washington, DC 20001.

2. DoD agrees to:

- a. Communicate the establishment of this MOU to all DoD Components.
- b. Take the lead in the development of policies related to INRMP development and implementation and seek the cooperation of the FWS and the State fish and wildlife agencies during development, review, and implementation.
- c. Ensure distribution of the DoD and revised FWS Sikes Act Guidelines to all appropriate DoD offices at every level of command.
- d. Encourage military installations to invite appropriate FWS and State fish and wildlife agency offices to participate in developing and updating the INRMPs. All such invitations should be extended well in advance of the needed date for the product or work in order to facilitate meaningful participation by all three Parties.
- e. Encourage military installations to take advantage of FWS and State fish and wildlife agency natural resources expertise through the use of Economy Act transfers and cooperative agreements. Priority should be given to projects that:

- i. Sustain the military mission;
 - ii. Consider the strategic planning priorities of the FWS and the State fish and wildlife agency; and
 - iii. Effectively apply the principles of ecosystem management.
- f. Encourage military installation to identify INRMP project requirements and give priority to those that:
 - i. Ensure conservation of natural resources while sustaining military mission activities;
 - ii. Achieve compliance with Federal, State, and local laws; and
 - iii. Provide adequate staffing for the development and implementation of the INRMP.
- g. Discuss with the FWS and the State fish and wildlife agencies all issues of mutual interest related to the protection, conservation, and management of fish and wildlife resources on DoD installations, and obtain the mutual agreement of the FWS and the States regarding all INRMP provisions related to activities within their legal jurisdiction.
- h. Subject to mission, safety and security requirements, provide public access to military installations to facilitate the sustainable multipurpose use of its natural resources.
- i. Identify DoD natural resource research needs, and develop research proposals with input from FWS and/or the IAFWA.
- j. Encourage the Military Services to establish natural resources management liaisons to facilitate:
 - i. Coordination and mutual agreement of INRMPs;
 - ii. Development and implementation of cooperative regional and local natural resource conservation partnerships and conservation initiatives with FWS and State fish and wildlife agency offices; and
 - iii. Natural resources conservation technology transfer and training initiatives between the Military Services, Federal land management agencies, and State fish and wildlife agencies.

3. FWS agrees to:

- a. Communicate the establishment of this MOU to each FWS Regional Office and appropriate field stations in close proximity to military installations.
- b. Distribute the DoD and revised FWS Sikes Act Guidelines to each FWS Regional Office and appropriate field station in close proximity to military installations.
- c. Designate regional and field station FWS liaisons to develop partnerships and assist the DoD in implementing joint management of ecosystem-based natural resource management programs.
- d. Identify FWS personnel needs for the development, review, updating, and implementation of INRMPs and expedite the fulfillment of those needs, as appropriate, based on funding and FWS priorities.
- e. Provide technical assistance to the DoD in managing Federal trust resources such as endangered species, migratory birds, interjurisdictional fisheries, invasive species, contaminants, wetlands, coastal resources, law enforcement, or other natural resource issues within the scope of FWS responsibilities, funding constraints and expertise.
- f. Work with the DoD to coordinate military natural resource research efforts and the creation of a consolidated source of information, with a particular emphasis on research on listed species and species at-risk.
- g. Disseminate upcoming proposed listing and critical habitat designations to DoD Headquarters offices and potentially affected installations as part of outreach efforts before the Federal Register publication of such proposed designations.
- h. Provide law enforcement support to protect fish, wildlife and plant resources on military installations within the jurisdiction of the FWS.

4. IAFWA agrees to:

- a. Communicate the establishment of this MOU to each State fish and wildlife agency director and appropriate field offices.
- b. Distribute the DoD and revised FWS Sikes Act Guidelines to each State fish and wildlife agency director and appropriate field offices.
- c. Facilitate and coordinate with the States to encourage them to:

- i. Participate in the development, review, updating and implementation of INRMPs upon request of military installations.
- ii. Designate State liaisons to assist in developing partnerships and to assist the DoD in implementing natural resource conservation and management programs.
- iii. Identify State wildlife management areas in close proximity to military installations and, where appropriate, participate in the joint management of ecosystem-based natural resource management projects.
- iv. Provide technical assistance to the DoD in managing natural resource issues such as endangered species, migratory birds, interjurisdictional fisheries, invasive species, contaminants, wetlands, coastal resources, law enforcement, outdoor recreation, or other natural resource issues within the scope of State responsibility and expertise.
- v. Identify State personnel needs for the development, review and implementation of INRMPs and expedite the fulfillment of these needs as appropriate based on available funding and State priorities.
- vi. Coordinate current and proposed State natural resource research efforts with those that may relate to DoD installations.
- vii. Coordinate with DoD installations in development of comprehensive state wildlife conservation plans.

E. STATEMENT OF NO FINANCIAL OBLIGATION

This MOU does not impose any financial obligation on the part of any signatory.

F. ESTABLISHMENT OF COOPERATIVE AGREEMENTS

The Parties are encouraged to enter into cooperative agreements to coordinate and implement natural resource management on military installations. If fiscal resources are to be transferred in support of this MOU, the Parties must develop a separately funded cooperative agreement. Such cooperative agreements may be entered into under the authorities of the Sikes Act (16 U.S.C. 670a-670f, as amended) and the Economy Act (31 U.S.C. 1535 and 1536). Each funded cooperative agreement shall include a work plan and a financial plan that identify goals, objectives, and a budget and payment schedule. A cooperative agreement to accomplish a study or research also will include a study design and methodology in the work plan. It is understood and agreed that any monies allocated via these cooperative agreements shall be expended in accordance with its terms and in the manner prescribed by the fiscal regulations and/or administrative policies of the party making the funds available.

APPENDIX D

Wildlife Species Information for NFARS

Table D-1-1. Birds recorded during 2006 point counts on the Niagara Falls Air Reserve Station

Common Name	Scientific Name	NFARS Total
American Crow	<i>Corvus brachyrhynchos</i>	18
American Goldfinch	<i>Carduelis tristis</i>	65
American Kestrel	<i>Falco sparverius</i>	12
American Robin	<i>Turdus migratorius</i>	13
Barn Swallow	<i>Hirundo rustica</i>	93
Black-capped Chickadee	<i>Poecile atricapilla</i>	1
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	1
Blue Jay	<i>Cyanocitta cristata</i>	6
Bobolink	<i>Dolichonyx oryzivorus</i>	53
Brown headed Cowbird	<i>Molothrus ater</i>	7
Canada Goose	<i>Branta canadensis</i>	6
Cedar Waxwing	<i>Bombycilla cedrorum</i>	7
Chimney Swift	<i>Chaetura pelagica</i>	1
Chipping Sparrow	<i>Spizella passerina</i>	1
Common Grackle	<i>Quiscalus quiscula</i>	9
Common Yellowthroat	<i>Geothlypis trichas</i>	18
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	37
Eastern Kingbird	<i>Tyrannus tyrannus</i>	6
Eastern Meadowlark	<i>Sturnella magna</i>	100
European Starling	<i>Sturnus vulgaris</i>	616
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	6
Gray Catbird	<i>Dumetella carolinensis</i>	8
Great Blue Heron	<i>Ardea herodias</i>	4
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	1
Hairy Woodpecker	<i>Picoides villosus</i>	1
Killdeer	<i>Charadrius vociferus</i>	40
Least Bittern	<i>Ixobrychus exilis</i>	1
Mallard	<i>Anas platyrhynchos</i>	10
Mourning Dove	<i>Zenaida asiatica</i>	42
Northern Cardinal	<i>Cardinalis cardinalis</i>	21
Northern Harrier	<i>Circus cyaneus</i>	5
Northern Mockingbird	<i>Mimus polyglottos</i>	
Purple Martin	<i>Progne subis</i>	5
Red-tailed Hawk	<i>Buteo jamaicensis</i>	7
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	171

Common Name	Scientific Name	NFARS Total
Ring-billed Gull	<i>Larus delawarensis</i>	246
Rock Dove	<i>Columbia livia</i>	23
Savannah Sparrow	<i>Passerculus sandwichensis</i>	358
Song Sparrow	<i>Melospiza melodia</i>	81
Spotted Sandpiper	<i>Actitis macularia</i>	2
Tree Swallow	<i>Tachycineta bicolor</i>	63
Willow Flycatcher	<i>Empidonax traillii</i>	16
Yellow Warbler	<i>Dendroica petechia</i>	16

Note: Grassland species are in color: generalist in blue, those that require grassland for breeding in green and obligate grassland species in bold green.

**Table D-2-1. Bird species found on the Niagara Falls Air Reserve Station,
November 1997 to July 1999.**

Common Name	Scientific Name
American Bittern	<i>Botaurus lentiginosus</i>
American Black Duck	<i>Anas rubripes</i>
American Coot	<i>Fulica americana</i>
American Crow	<i>Corvus brachyrhynchos</i>
American Goldfinch	<i>Carduelis tristis</i>
American Robin	<i>Turdus migratorius</i>
American Tree Sparrow	<i>Spizella arborea</i>
American Woodcock	<i>Scolopax minor</i>
Bank Swallow	<i>Riparia riparia</i>
Black-capped Chickadee	<i>Poecile atricapilla</i>
Black-Crowned Night Heron	<i>Nycticorax nycticorax</i>
Black-throated Sparrow	<i>Amphispiza bilineata</i>
Boblink	<i>Dolichonyx oryzivorus</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Canada Goose	<i>Branta Canadensis</i>
Chipping Sparrow	<i>Spizella passerina</i>
Common Grackle	<i>Quiscalus quiscula</i>
Eastern Kingbird	<i>Tyrannus tyrannus</i>
Eastern Meadowlark	<i>Sturnella magna</i>
Eastern Phoebe	<i>Sayornis phoebe</i>
Eastern Towhee	<i>Pipilo erythrophthalmus</i>
European Starling	<i>Sturnus vulgaris</i>
Field Sparrow	<i>Spizella pusilla</i>
Flycatcher Spp.	
Grasshopper Sparrow	<i>Ammodramus savannarum</i>
Great Blue Heron	<i>Ardea herodias</i>
Great Egret	<i>Ardea alba</i>
Gray Catbird	<i>Dumetella carolinensis</i>
Gulls	<i>Larus spp.</i>
Horned Lark	<i>Eremphila alpestris</i>
House Sparrow	<i>Passer domesticus</i>
Killdeer	<i>Charadrius vociferus</i>
Mallard	<i>Anas platyrhynchos</i>
Mourning Dove	<i>Zenaida asiatica</i>

Common Name	Scientific Name
Northern Harrier	<i>Circus cyaneus</i>
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Purple Finch	<i>Carpodacus purpureus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Red-wing Blackbird	<i>Agelaius phoeniceus</i>
Ring-necked Pheasant	<i>Phasianus colchicus</i>
Rock Dove	<i>Columbia livia</i>
Savanna Sparrow	<i>Passerculus sandwichensis</i>
Short-eared Owl	<i>Asio flammeus</i>
Snowy Owl	<i>Nyctea scandiaca</i>
Song Sparrow	<i>Melospiza melodia</i>
Spotted Sandpiper	<i>Actitis macularia</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Upland Sandpiper	<i>Bartramia longicauda</i>
White-throated Sparrow	<i>Zonotrichia albicollis</i>
Wood Thrush	<i>Hylocichla mustelina</i>

Source: NFARS 2001

**Table D-3-1. Mammal species found on the Niagara Falls Air Reserve Station,
November 1997 to July 1999.**

Common Name	<i>Scientific Name</i>
Beaver	<i>Castor canadensis</i>
Coyote	<i>Canus lutrans</i>
Deer Mouse	<i>Peromyscus maniculatus</i>
Eastern Cottontail Rabbit	<i>Sylvilagus floridanus</i>
Meadow Vole	<i>Microtus pennsylvanicus</i>
Muskrat	<i>Ondatra zibethica</i>
Raccoon	<i>Procyon Lotor</i>
Red Fox	<i>Vulpes vulpes</i>
Striped Skunk	<i>Mephitis mephitis</i>
Whitetail Deer	<i>Odocoileus virginianus</i>
Woodchuck	<i>Marmota monax</i>

Source: NFARS 2001

Table D-4-1. Reptile and Amphibian species found on the Niagara Falls Air Reserve Station, November 1997 to July 1999.

Common Name	Scientific Name
Eastern Box Turtle	<i>Terrapene carolina carolina</i>
Eastern Garter Snake	<i>Thamophis sirtalis</i>
Midland Painted Turtle	<i>Chrysemys picta marginata</i>
Northern Leopard Frog	<i>Rana pipiens</i>
Snapping Turtle	<i>Chelydra serpentina</i>
Wood Frog	<i>Rana sylvatica</i>

Source: NFARS 2001

Table D-5-1. Fish species found in waters on the Niagara Falls Air Reserve Station, November 1997 to July 1999.

Common Name	Scientific Name
Bluegill	<i>Lepomis macrochirus</i>
Bluntnose Minnow	<i>Pimephales notatus</i>
Brook Stickleback	<i>Culea inconstans</i>
Common Carp	<i>Cyprinus carpio</i>
Central Mudminnow	<i>Umbra limi</i>
Common Shiner	<i>Notropis cornutus</i>
Creek Chub	<i>Semotilus atromaculatus</i>
Emerald Shiner	<i>Notropis cornutus</i>
Goldfish	<i>Carassius auratus</i>
Johnny Darter	<i>Etheostoma nigrum</i>
Largemouth Bass	<i>Micropterus salmoides</i>
Pumpkinseed	<i>Lepomis gibbosus</i>
Rock Bass	<i>Amblopites rupestris</i>
White Sucker	<i>Catostomus commersoni</i>

Source: NFARS 2001

APPENDIX E

BASH Program Pest Management Considerations and Guidelines

BASH PROGRAM PEST MANAGEMENT CONSIDERATIONS

Food Source Control. Invertebrates and rodents provide important food sources for many birds. The pest management section should periodically survey and reduce these pests when required. Control of insects, earthworms, rodents, etc., through use of insecticides and rodenticides will be accomplished under the supervision of the Range Pest Management Office approved by the U.S. Environmental Protection Agency (USEPA). Control should begin early in the spring. This must be coordinated with the fish and wildlife management section of the Integrated Natural Resources Management Plan (INRMP).

Eliminate Roosting Sites. Blackbirds and starling roosts will be controlled by vegetation management of roost sites where possible. Trees will be pruned to reduce the number of perches available, and entire trees or stands removed if necessary. When necessary, other methods should be considered.

Bird-Proofing Buildings and Hangars. Pigeons, sparrows, and starlings frequently occur in buildings and hangars, and must be excluded. Denying access by screening windows, closing doors, and blocking entry holes is most effective. When necessary, other methods should be considered.

Pellet Guns. Consider shooting birds as a short-term solution. Experience has shown that not all birds can be removed using this technique. Proper safety equipment is necessary. A depredation permit also may be required.

Netting. Consider installing under superstructure to exclude pest birds from roosting areas. Ensure no gaps or holes are present for birds to get through.

Avitrol. Pest management personnel may consider placing this in or near hangars to kill birds or create a distressed response that scares others away.

Trapping and Removal. Consider using large cages with food, water, and other birds to trap pest birds. Birds can either be released away from the hangar or killed. Permits from the U.S. Fish and Wildlife Service and the state wildlife agency are required to kill protected birds.

Design Features. Consider structures with the support features located on the outside of the building to greatly reduce bird numbers. Consider this design when planning a new hangar.

Door Coverings. Consider using netting or plastic strips suspended over the doors to exclude birds. Ensure no tears or holes are present that allow birds access to the hangar.

Sharp Projections. Consider use in limited areas such as ledges, overhangs, or small places where birds cannot be allowed. Expense prohibits their use on the entire structure.

Night Harassment. Consider use of high pressure air or water streams to make hangars an undesirable roosting site. Persistence is the key.

GUIDELINES TO DECREASE AIRFIELD ATTRACTIVENESS TO BIRDS

The most permanent methods of discouraging birds from using airfields involve removing attractive habitat features. The following information is provided to assist the staff organization(s) assigned the responsibilities for airfield grounds maintenance, solid waste management, and wildlife management. Implementation of any bird/wildlife aircraft strike hazard (BASH) reduction measure should be accomplished in coordination with considerations identified in the Range natural resources management plan (such as endangered species and wetland constraints) and pest management plan.

- *Grass Height Management*—Tall grass discourages flocking species from entering the airfield because reduced visibility disrupts interflock communication and flock integrity and also prevents predator detection. However, grass normally should not exceed 14 inches, because high grass will attract some bird and rodent species that in turn attract predators such as raptors. In mowing operations in the clear zone maintain a uniform grass height of between 7 and 14 inches. Mowing frequency should be as needed to maintain these height requirements. Airfields with a variety of grass species may have a fast-growing strain that reaches 14 inches sooner than the rest of the airfield. Mowing should be conducted when the average grass height reaches 14 inches. Begin mowing adjacent to runways and finish in the infield or outermost grass area. This will tend to cause insects and other animals to move away from aircraft take-off and landing areas. Also, grass should not be mowed to a shorter length next to the runway than in other areas. Coordinate mowing with periods of low-flight activity. Grass should be cut before it goes to seed to discourage seed-eating birds from using the airfield.
- *Broad-Leafed Weed Control*—Broad-leafed weeds attract a variety of birds, may produce seeds and berries, and may limit grass growth. Broad-leafed weeds should be kept to a minimum on the airfield. Apply herbicides, as necessary, to accomplish this.
- *Planting Bare Areas*—Bare areas are frequently used by birds as resting sites and should be eliminated on the airfield. Grass should be planted as necessary, and appropriate irrigation maintained until complete ground cover is established.
- *Fertilizing*—Selectively stimulate grasses to promote a uniform cover. Irrigation may be required for short periods of time to support turf growth. Watering should be controlled to enhance root production and decrease seed head production.
- *Landscaping*—Shrubs, ornamental trees, shelterbelts, hedgerows, and noise suppression barriers are important plantings on an air station. However, the airfield and clear zones are not proper places for landscape planting. These types of vegetation can influence bird populations and their movements around the airfield. Trees that are planted close together when they are young often intermingle as they mature, forming a continuous canopy. This close, dense foliage attracts birds and is ideal for providing shelter, food, and nesting. Proper planning can reduce these potential bird attractants. When planting shrubs, select those species that do not produce fruit, especially during the winter. Ripe berries attract birds for short periods each year. Blackbird and starling roosts are particularly hazardous because of the large number of birds (often numbering in the hundreds) that may be present in a single roost. Birds usually can be stimulated to move by pruning and thinning trees and shrubs to open the canopy. In some situations, it may be necessary to remove all the plants. Trees and shrubs should not be allowed to grow in the infield areas.

- *Reducing Edge Effect*—Edge effect refers to the transition zone between two distinct habitat types (e.g., brush to grassland) that is highly attractive to wildlife. The airfield should be maintained as uniformly as possible to reduce this effect (if a BASH problem is caused by animals attracted to the transition zone).
 - *Leveling of Airfield*—High and low spots on the field should be leveled or filled to reduce attractiveness to birds and prevent standing water. This does not refer to delineated/jurisdictional wetlands.
 - *Removal of Dead Vegetation*—Dead vegetation such as brush piles, large amounts of grass clippings, hay bales, etc., and the cover it affords should be removed as soon as possible.
 - *Removal of Remains from Airfield*—Dead birds or other animals should be removed from the field to avoid attracting vultures and other scavenging birds. Forward remains that may result from collisions with aircraft to the appropriate natural resources office if assistance in identification is needed.
 - *Drainage Ditches*—Inspect ditches regularly and keep them obstacle-free. Ditch sides should be maintained as steeply as possible—minimum slope ratio of 5:1—to discourage wading birds and emergent vegetation. Vegetation should be removed as often as necessary to maintain flow and discourage use by birds.
 - *Eliminate Standing Water*—Coordination with the U.S. Army Corps of Engineers is required before altering wetlands. Small ponds or puddles and some large bodies of standing water should be eliminated to reduce attractiveness to birds. Maintaining drainage in low spots and ditch maintenance are essential to avoid standing water.
 - *Use Proper Erosion Control Vegetation*—Vegetation should be used that is appropriate for the region and supports BASH reduction philosophy (i.e., do not control erosion using plants that produce seeds at heights below 14 to 18 inches).
-

Gulls	<p>These birds represent the most significant hazard to aircraft worldwide. Due to their omnivorous feeding habits and preference for flat, open areas to rest they are commonly found on airfields. Gulls are most active just after sunrise and before sunset as they move to and from feeding areas. Improperly operated landfills are a significant source of attraction for gulls and should not be allowed in the airfield vicinity. Maintenance of grass height between 7 and 14 inches is critical in reduction of gull numbers. Even with this in effect, gulls may inhabit the airfield, particularly during inclement weather. Persistent harassment using pyrotechnics and bio-acoustics is necessary to discourage these birds. Occasionally, live ammunition should be used to reinforce these techniques. Other techniques such as gas cannons, model gulls, radio-controlled model aircraft, and even falconry should be considered if available and cost-effective. Poisoning of earthworms and insects (especially grasshoppers) may be accomplished if these invertebrates are found to attract gulls. Do not allow these birds to establish a habit of using the airfield to feed, breed, or rest.</p>
Pigeons and Doves	<p>These birds are seed-eaters and are attracted to seed-producing weeds, grasses, and shrubs. Open areas or bare spots are attractive as resting or feeding sites. Pyrotechnics can be effective in frightening these birds. Proper grass-height management, irrigation and mowing before grass goes to seed will limit the number of pigeons and doves on the field. Pigeons frequently occur in structures such as hangers. Netting, shooting, trapping, poison-baiting, and especially toxic bird perches (such as Rid-A-Bird) can drastically reduce their numbers in these structures.</p>
Owls	<p>Most owls are nocturnal and attracted to rodents as a food source. Rodent control may be necessary on the airfield; proper management of airfield grass will limit their numbers. Remove perch sites such as unnecessary fence posts and dead trees to limit the number of owls. Avoid overflying landfills at night to reduce hazards from owls.</p>
Woodpeckers	<p>Woodpecker strikes should be extremely rare. These birds are common in forested areas, but generally remain below canopy level. On the airfield, elimination of trees should eliminate strikes with these birds. Migratory birds may be encountered, but are rarely struck.</p>
Horned Larks	<p>These birds are very difficult to control. They are attracted by bare spots such as along runway sides, where they eat weed seeds and insects. The best defense against these birds is a thick, uniform grass with no bare spots. Consider coating bare spots, particularly along runways, with oil-base or asphalt cover. Pyrotechnics can be used, but these birds will tend to fly only short distances and settle down. Persistence is the key to success.</p>
Swallows and Pratincoles	<p>These birds eat insects in flight and are commonly found above airfields. Fortunately, swallows are adept at avoiding aircraft, but if they present a problem, measures can be taken for their dispersal. Insect control will reduce the swallow numbers and discouragement of nesting will further decrease numbers. Wash mud nests from eaves, culverts, etc., with a hose as the birds begin nesting. If swallows are noted resting on runways or taxiways, use pyrotechnics to disperse them.</p>
Crows and Ravens	<p>These omnivorous birds are common in open areas and around landfills. These birds may occur in large flocks, particularly at sunset as they return to roost sites. Proper grass-height management will reduce population numbers. Remove any known roost sites or thin individual roost trees. Landfills must be operated in a manner to discourage these birds. Bio-acoustics and pyrotechnics can be used to frighten these birds if they occur on the field.</p>

<p><i>Blackbirds, Grackles, Cowbirds, and Starlings</i></p>	<p><i>These birds can be particularly hazardous because they frequently occur in huge flocks, sometimes in the millions. Blackbirds and starlings are attracted to flat, open areas to feed, rest, or stage/pre-roost. Maintenance of grass height between 7 and 14 inches is the best means of reducing airfield blackbird and starling numbers. Do not allow seed-producing plants to grow on the airfield nor outlease grain crops in areas where these birds are known to occur. Roost sites must be eliminated near the flightline. Selective pruning or removal of roost trees, brush, or cattails must be accomplished if blackbirds and starlings are roosting on the Installation. Blackbirds and starlings respond well to an intense frightening program using bio-acoustics and pyrotechnics. Other methods should be used to supplement this program as necessary. Starlings are not federally protected and may be killed without permits. Permits are required for other species. Occasional shooting of birds will reinforce other frightening techniques. Poisoning or trapping may also be considered with USFWS assistance recommended. If these birds occur in hangars, toxic bird perches are recommended to eliminate the problem. Avoid at all cost, flying near known blackbird and starling roosts, especially at sunrise and sunset and during spring and fall migration.</i></p>
<p><i>Meadowlarks</i></p>	<p><i>These birds occur on nearly every airfield and are attracted to grasslands and low weeds. Eliminate broad-leaved weeds and maintain grass height at 7 to 14 inches. Elimination of suitable perching sites, such as fence posts and brush, will also aid in reduction. Pyrotechnics can be used, but meadowlarks usually only fly a short distance before settling down again. Persistence is the key to success.</i></p>
<p><i>House Sparrows</i></p>	<p><i>These birds are not frequently struck by aircraft, but are common pests around structures. House sparrows often nest in hangars and dense shrubs and trees. These birds are not protected by law and may be killed without permit. Toxic bird perches may be used to remove House Sparrows from hangars or other structures. Frightening techniques are usually ineffective against these birds.</i></p>
<p><i>Warblers</i></p>	<p><i>The wide range of species of warblers thrive in a variety of habitats. Most prefer shrubs, trees, or riparian habitats where they feed, breed, or rest. These habitat types should not be allowed on the airfield and warbler strikes will be rare as a result. Migrating warblers may be struck at night, especially as they fly south in fall. Fortunately, these birds are very small and rarely cause damage.</i></p>
<p><i>Fringillids (sparrows, finches, grosbeaks, and buntings)</i></p>	<p><i>Most Fringillids are not hazardous to aircraft operations, but occasional large flocks can be encountered, particularly during migration. These birds are seed-eaters, as a rule, and most prefer weedy, brushy, or forested areas. Proper grass height management is the best means of control. Grass exceeding 14 inches will attract many of these birds and should not be allowed. Mowing should be accomplished before grass goes to seed. Pyrotechnics can be used to frighten many of these birds; success may be limited with others.</i></p>
<p><i>Mammals</i></p> <p><i>Deer</i></p> <p><i>Foxes</i></p>	<p><i>While concern is mostly centered on birds, several mammalian species also pose threats to flight operations and must be considered.</i></p> <p><i>White-tailed deer occasionally occur on airfields. These species are generally browsers, preferring broad-leaf weeds, shrubs, and trees. Do not allow growth of these plants on the airfield. The presence of these plants in surrounding areas will serve to draw these animals to the airfield. Tall fences (up top 15 feet) can discourage these animals from entering airfields, but due to expense, should only be used in urgent cases. On-Installation hunting will also discourage the presence of deer species. Pyrotechnics should be used to frighten these animals when they do occur in the airfield.</i></p> <p><i>These animals are attracted to airfields by rodents, rabbits, and other food sources. Dens may be found in banks, culverts, or other suitable areas. Rodent control will reduce the numbers of these animals. Pyrotechnics can be used to frighten these species and occasional shooting of individual animals or recurrent pests will also reduce the hazard. Permits may be required.</i></p>

<i>Rabbits and Hares</i>	<i>In addition to direct hazards to aircraft, these animals often attract raptors. Proper grass management will reduce the number of these animals on airfields. Occasional extensive rabbit hunts on the field can reduce populations for several subsequent years. Poisoning can also be effective for reduction of populations. Permits may be required.</i>
<i>Rodents</i>	<i>These animals attract raptors. Control by maintaining a uniform turf at the proper heights. Rodenticides may be used in some cases.</i>

Source: USAF 1997

BASH EVIDENCE COLLECTION AND HANDLING

Feather identification is almost always done using whole feathers. The more feathers or evidence provided, the more quickly the identification can be accomplished. There are special cases where species are identified based on the microscopic structures of the downy part of the feather. Therefore, it is important to send any tiny feather fragment that is found. However, if the whole bird or many feathers are found, all of the material should be sent for identification.

What to collect

- Any and all feather material that is found in engine or on aircraft
- Any feathers or parts of feathers found on airfield
- Any bird parts (i.e., feet, talons, bones).

How to send

- Place unknown material in a zip-lock bag (do not put small samples in large bags because it is difficult to locate the feathers).
- Tiny bits and pieces of feathers can be placed in a clean white envelope and then put in a zip-lock bag.
- Include all information pertaining to the strike (i.e., date, locality, time of day, altitude, damage amount, number of birds seen, etc.).
- Send as much material as possible—even if it has a putrid odor.
- Send the material as soon as possible (before it decomposes) by Federal Express, AirBorne Express, or overnight mail.

What NOT to do

- Never use cellophane tape on feathers (downy barbules get tangled and glued and are impossible to remove).
- Never cut feathers off of the bird or cut the tips away from whole feathers (sometimes it is necessary to examine the fine structures in the fluffy part of the feather; if that part has been cut away it is impossible to do the analysis).
- Never use Post-It[®] notes (feathers get stuck in the glued edge).

Where to send

Smithsonian
Attn: Carla Dove
Natural Resources Building
MRC-116
10th and Constitution Ave., NW
Washington, DC 20560

Source: Laybourne, Roxy. The Smithsonian Institute. Museum of Natural History, Ornithology Department.

APPENDIX F

Distribution List for Combined INRMP/EA

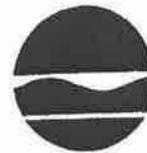
APPENDIX G

**Information Supporting the Operational Component Plan
for Fish and Wildlife Management**

APPENDIX H

**Information Supporting the Operational Component Plan for
Threatened and Endangered Species Management**

New York State Department of Environmental Conservation
270 Michigan Ave., Buffalo, New York 14203-2999
(716) 851-7010



Michael D. Zagata
Commissioner

December 2, 1996

Mr. Dermott J. Smyth, Base Civil Engineer
Civil Engineering/CE
914 Airlift Wing (AFRES)
2405 Franklin Drive
Niagara Falls, NY 14304-5063

RE: Habitat Classification - Niagara Falls Air Reserve Station

Dear Mr. Smyth:

This letter is in response to your request for a determination of habitat classification for the Niagara Falls Air Reserve Station. The following recommendation is based on my July 9, 1996 and October 16, 1996 visits to the Station and conversations with Mr. James Mathews of your facility and Mr. Brian Hoppy of Science & Engineering Associates, Inc.

Habitat having regional importance for conserving and managing fish and wildlife does exist at this facility. Specifically, it is the short grassland habitat which is adjacent to the runways and taxiways of the Station. This habitat is presently supporting various grassland species, including, Upland Sandpipers (13 have been observed at one time), Northern Harrier, Bobolink, Field Sparrow and Eastern Meadowlark. The observation of 13 Upland Sandpipers has regional significance. This represents the largest reported concentration of this species to my knowledge within Region 9 of this Department. This sighting undoubtedly represents successful reproduction at the facility. As I have mentioned to you in a previous letter, this species is ~~also~~ listed as "Special Concern" in New York. This habitat ~~also~~ appears suitable for Grasshopper Sparrow, also listed as "Special Concern" in New York State. Further surveys conducted during June may indicate the presence of this important uncommon species.

Because of the close proximity of this habitat to the runways and taxiways and the necessity of it being mowed periodically, a Class I classification for the Station seems inappropriate. Conversations with Mr. Mathews and Mr. Hoppy indicate that the short grassland habitat can be maintained and its importance recognized under a Class II classification. If these management concerns can be satisfied under Class II

then I support such a designation.

The following mowing guidelines will maintain adequate habitat for Upland Sandpipers as well as, the other mentioned grassland species.

1. Grasses should be maintained at a height of 20-30 cm (8-12") over those areas which are not directly adjacent to runways or taxiways.
2. These areas should not be mowed during the nesting and brood rearing period, May 1 - July 31.
3. Grounds maintenance personnel should watch for adults, mark and avoid nests when mowing areas directly adjacent to runways and taxiways which require mowing during the May 1 - July 31 period.

Please keep me informed of the numbers of Upland Sandpipers observed at the Station and associated dates of observations. I would like to survey the grasslands for Grasshopper Sparrow during the early summer of 1997 if I am permitted access to the site. Please feel free to contact me at the Buffalo Wildlife Office (716)851-7010 if you have any questions concerning my recommendations.

Sincerely yours,



Kenneth Roblee
Sr. Wildlife Biologist
Region 9, Buffalo

cc: Mr. Russ Biss
Ms. Kathryn Schneider



March 20, 2007

Demott F. Smyth
914 MSG/CE
2405 Franklin Drive
Niagara Falls ARS, New York 14304-5063

Dear Mr. Smyth:

Habitat Classification - Niagara Falls Reserve Station

This letter is in response to your December 27, 2006 letter requesting a determination if significant natural resources exist at the Niagara Falls Air Reserve Station (ARS) and a recommendation on the applicability of an Integrated Natural Resources Plan (INRMP). My response is based on my previous visits to the ARS in 1996 and 1997 and the review of the following bird survey reports prepared by the U.S. Fish and Wildlife Service, Amherst, NY Office:

1. Impacts of Grass Mowing on Bird Species in the Semi – improved Areas of the Niagara Falls Air Reserve Station, Niagara Falls, New York (January 2006).
2. Management Recommendations for Short-eared Owl and Northern Harrier on Niagara Falls Air Reserve Station, Niagara Falls, New York (February 2005).
3. The Relative Abundance and Activity Patterns of Short-eared Owls, Northern Harriers, and Associated Fauna on Niagara Falls Air Reserve Station, Niagara Falls, New York (January 2004).

In my 1996 recommendation I indicated that the ARS contained habitat of regional importance for conserving and managing fish and wildlife. Specifically, the short grassland habitat adjacent to the runways and taxiways of the Station were supporting various grassland birds, including Upland Sandpipers (NYS threatened), Northern Harrier (NYS threatened), Bobolink, Field Sparrow and Eastern Meadowlark. A review of the recent bird survey reports of the U.S. Fish and Wildlife Service for the ARS indicate that these species still are observed to use the grassland habitat and that several are successfully breeding there. In addition, two additional New York State listed grassland species were identified as either breeding or observed at the Station. These are Grasshopper Sparrow (NYS special concern) and Short-eared Owl (NYS endangered).

Demott F. Smyth
March 21, 2007
Page 2

The Service's finding that several species are successfully breeding at the site further indicates the importance of the Stations grassland habitat. Their investigation determined that for some species, such as Savannah Sparrow, nest success was higher than a nearby grassland site. It is apparent from these surveys that the ARS grassland habitat under current mowing and management practices is not acting as a harmful sink to regional grassland birds, but may be contributing to the maintenance of regional populations. In addition, winter foraging and resting habitat is being provided for migratory species such as Snowy Owl and Short-eared Owl.

After consideration of this new information I maintain that the ARS grassland habitat has regional importance for conserving and managing grassland bird species. This is in part due to the rarity and decline of suitable maintained grassland habitat in Western New York. The quality of this habitat is being maintained under the current prescribed mowing and bird management practices of the BASH program for the ARS. In view of this, I believe that the grassland habitat of the ARS is suitable for conserving and managing grassland bird species and therefore a category I classification for this installation is applicable.

Please keep me informed of the results of any future or ongoing surveys for wildlife species at the ARS. And thank you for the opportunity to comment on the importance of the grassland habitat.

If you have any questions about my recommendations please contact me at the Buffalo Wildlife Office (716) 851-7010.

Sincerely,

A handwritten signature in black ink that reads "Kenneth Roblee". To the right of the signature, the letters "CMA" are written in a smaller, slightly slanted font.

Kenneth Roblee
Sr. Wildlife Biologist
Region 9, Buffalo

KR:sw

cc: Mr. Mark Kandel, NYSDEC, Regional Wildlife Manager
Mr. Chuck Rosenburg, NYSDEC, Senior Ecologist

APPENDIX I

Information Supporting the Operational Component Plan for Wetlands

APPENDIX J

**Information Supporting the Operational Component Plan
for Watershed Management**

APPENDIX K

Information Supporting the Operational Component Plan for Grounds Maintenance

Table K-1-1. Federal Noxious Weed List

<i>Scientific Name (Family)</i>	Common Name
Aquatic/Wetland	
<i>Azolla pinnata</i> (Azollaceae)	Mosquito fern or Water velvet
<i>Caulerpa taxifolia</i> (Caulerpaceae)	Mediterranean clone of caulerpa
<i>Eichhornia azurea</i> (Pontederiaceae)	Anchored water hyacinth
<i>Hydrilla verticillata</i> (Hydrocharitaceae)	Hydrilla
<i>Hygrophila polysperma</i> (Acanthaceae)	Miramar weed
<i>Ipomoea aquatica</i> (Convolvulaceae)	Chinese waterspinach
<i>Lagarosiphon major</i> (Hydrocharitaceae)	Oxygen weed
<i>Limnophila sessiliflora</i> (Scrophulariaceae)	Ambulia
<i>Melaleuca quinquenervia</i> (Myrtaceae)	Melaleuca
<i>Monochoria hastata</i> (Pontederiaceae)	Monochoria
<i>Monochoria vaginalis</i> (Pontederiaceae)	Pickerel weed
<i>Ottelia alismoides</i> (Hydrocharitaceae)	Duck-lettuce
<i>Sagittaria sagittifolia</i> (Alismataceae)	Arrowhead
<i>Salvinia auriculata</i> (Salviniaceae)	A giant salvinia
<i>Salvinia biloba</i> (Salviniaceae)	A giant salvinia
<i>Salvinia herzogii</i> (Salviniaceae)	A giant salvinia
<i>Salvinia molesta</i> (Salviniaceae)	A giant salvinia
<i>Solanum tampicense</i> (Solanaceae)	Wetland nightshade
<i>Sparganium erectum</i> (Sparganiaceae)	Exotic bur-reed
Parasitic	
<i>Aeginetia</i> spp. (Orobanchaceae)	No common name
<i>Alectra</i> spp. (Scrophulariaceae)	No common name
<i>Cuscuta</i> spp. other than native or widely distributed species (Cuscutaceae)	Dodders
<i>Orobanche</i> spp. other than native or widely distributed species (Orobanchaceae)	Broomrapes
<i>Striga</i> spp. (Scrophulariaceae)	Witchweeds
Terrestrial	
<i>Ageratina adenophora</i> (Asteraceae)	Crofton weed
<i>Alternanthera sessilis</i> (Amaranthaceae)	Sessile joyweed
<i>Asphodelus fistulosus</i> (Liliaceae)	Onionweed
<i>Avena sterilis</i> L. (Poaceae)	Animated or Wild oat
<i>Carthamus oxyacanthus</i> (Asteraceae)	Wild safflower
<i>Chrysopogon aciculatus</i> (Poaceae)	Pilipiliula

<i>Scientific Name (Family)</i>	Common Name
Terrestrial (continued)	
<i>Commelina benghalensis</i> (Commelinaceae)	Benghal dayflower
<i>Crupina vulgaris</i> (Asteraceae)	Common crupina
<i>Digitaria abyssinica</i> (=D. <i>scalarum</i>) (Poaceae)	African couch grass
<i>Digitaria velutina</i> (Poaceae)	Velvet fingergrass
<i>Drymaria arenarioides</i> (Caryophyllaceae)	Lightening weed, alfombrilla
<i>Emex australis</i> (Polygonaceae)	Three-cornered jack
<i>Emex spinosa</i> (Polygonaceae)	Devil's thorn
<i>Galega officinalis</i> (Fabaceae)	Goats rue
<i>Heracleum mantegazzianum</i> (Apiaceae)	Giant hogweed
<i>Imperata brasiliensis</i> (Poaceae)	Brazilian satintail
<i>Imperata cylindrica</i> (Poaceae)	Cogongrass
<i>Ischaemum rugosum</i> (Poaceae)	Murain-grass
<i>Leptochloa chinensis</i> (Poaceae)	Asian sprangletop
<i>Lycium ferocissimum</i> (Solanaceae)	African boxthorn
<i>Melastoma malabathricum</i> (Melastomataceae)	No common name
<i>Mikania cordata</i> (Asteraceae)	A mile-a-minute
<i>Mikania micrantha</i> (Asteraceae)	A mile-a-minute
<i>Mimosa invisa</i> (Fabaceae)	Giant sensitive plant
<i>Mimosa pigra</i> (Fabaceae)	Catclaw mimosa
<i>Nassella trichotoma</i> (Poaceae)	Serrated tussock
<i>Opuntia aurantiaca</i> (Cactaceae)	Jointed prickly pear
<i>Oryza longistaminata</i> (Poaceae)	A red rice
<i>Oryza punctata</i> (Poaceae)	A red rice
<i>Oryza rufipogon</i> (Poaceae)	A red rice
<i>Paspalum scrobiculatum</i> (Poaceae)	Kodo-millet
<i>Pennisetum clandestinum</i> (Poaceae)	Kikuyugrass
<i>Pennisetum macrourum</i> (Poaceae)	African feathergrass
<i>Pennisetum pedicellatum</i> (Poaceae)	Kyasuma-grass
<i>Pennisetum polystachion</i> (Poaceae)	Missiongrass
<i>Prosopis alapataco</i> (Fabaceae)	A mesquite
<i>Prosopis argentina</i>	A mesquite
<i>Prosopis articulata</i>	A mesquite
<i>Prosopis burkartii</i>	A mesquite
<i>Prosopis caldenia</i>	A mesquite
<i>Prosopis calingastana</i>	A mesquite

<i>Scientific Name (Family)</i>	Common Name
Terrestrial (continued)	
<i>Prosopis campestris</i>	A mesquite
<i>Prosopis castellanosii</i>	A mesquite
<i>Prosopis denudans</i>	A mesquite
<i>Prosopis elata</i>	A mesquite
<i>Prosopis farcta</i>	A mesquite
<i>Prosopis ferox</i>	A mesquite
<i>Prosopis fiebrigii</i>	A mesquite
<i>Prosopis hassleri</i>	A mesquite
<i>Prosopis humilis</i>	A mesquite
<i>Prosopis kuntzei</i>	A mesquite
<i>Prosopis pallida</i>	A mesquite
<i>Prosopis palmeri</i>	A mesquite
<i>Prosopis reptans</i>	A mesquite
<i>Prosopis rojasiana</i>	A mesquite
<i>Prosopis ruizlealii</i>	A mesquite
<i>Prosopis ruscifolia</i>	A mesquite
<i>Prosopis sericantha</i>	A mesquite
<i>Prosopis strombulifera</i>	A mesquite
<i>Prosopis torquata</i>	A mesquite
<i>Rottboellia cochinchinensis</i> (Poaceae)	Itchgrass
<i>Rubus fruticosus</i> (Rosaceae)	Wild blackberry complex
<i>Rubus moluccanus</i> (Rosaceae)	Wild blackberry
<i>Saccharum spontaneum</i> (Poaceae)	Wild sugarcane
<i>Salsola vermiculata</i> (Chenopodiaceae)	Wormleaf salsola
<i>Setaria pallide-fusca</i> (Poaceae)	Cattail grass
<i>Solanum torvum</i> (Solanaceae)	Turkeyberry
<i>Solanum viarum</i> (Solanaceae)	Tropical soda apple
<i>Spermacoce alata</i> (Rubiaceae)	Borreria
<i>Tridax procumbens</i> (Asteraceae)	Coat buttons
<i>Urochloa panicoides</i> (Poaceae)	Liverseed grass

APPENDIX L

**Information Supporting the Operational Component Plan
for Outdoor Recreation/Public Access**

APPENDIX M

Information Supporting the Operational Component Plan for Surrounding Lands

APPENDIX N

Information Supporting the Operational Component Plan for Geographic Information Systems
